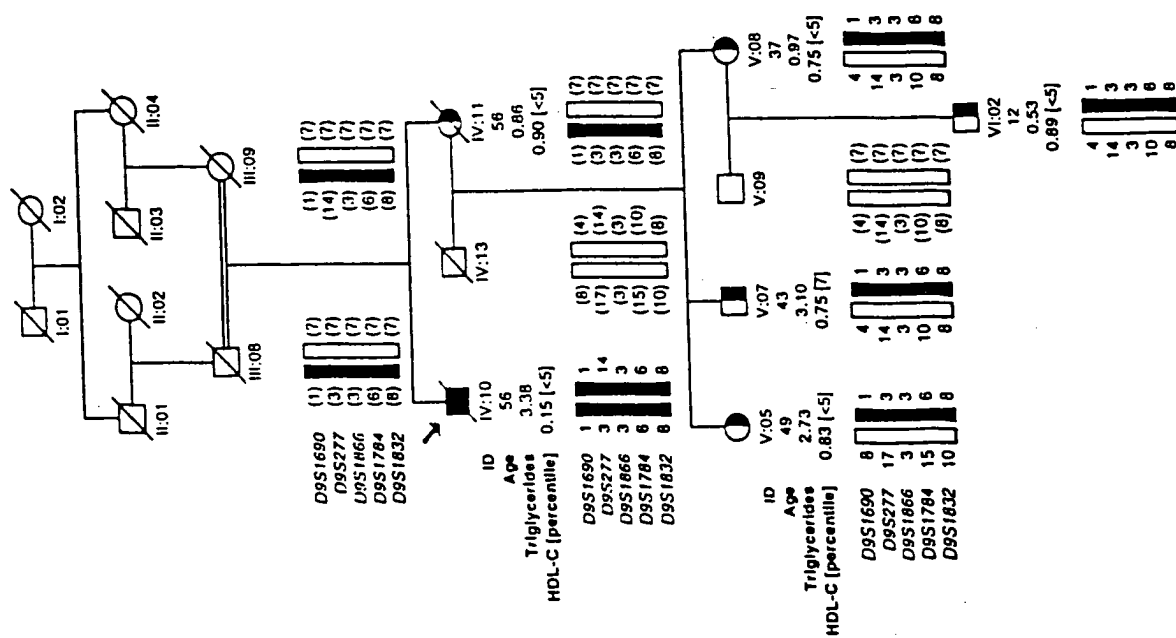




[illegible]

**Fig. 1B**



Fig. 2A

Family FHA - 1

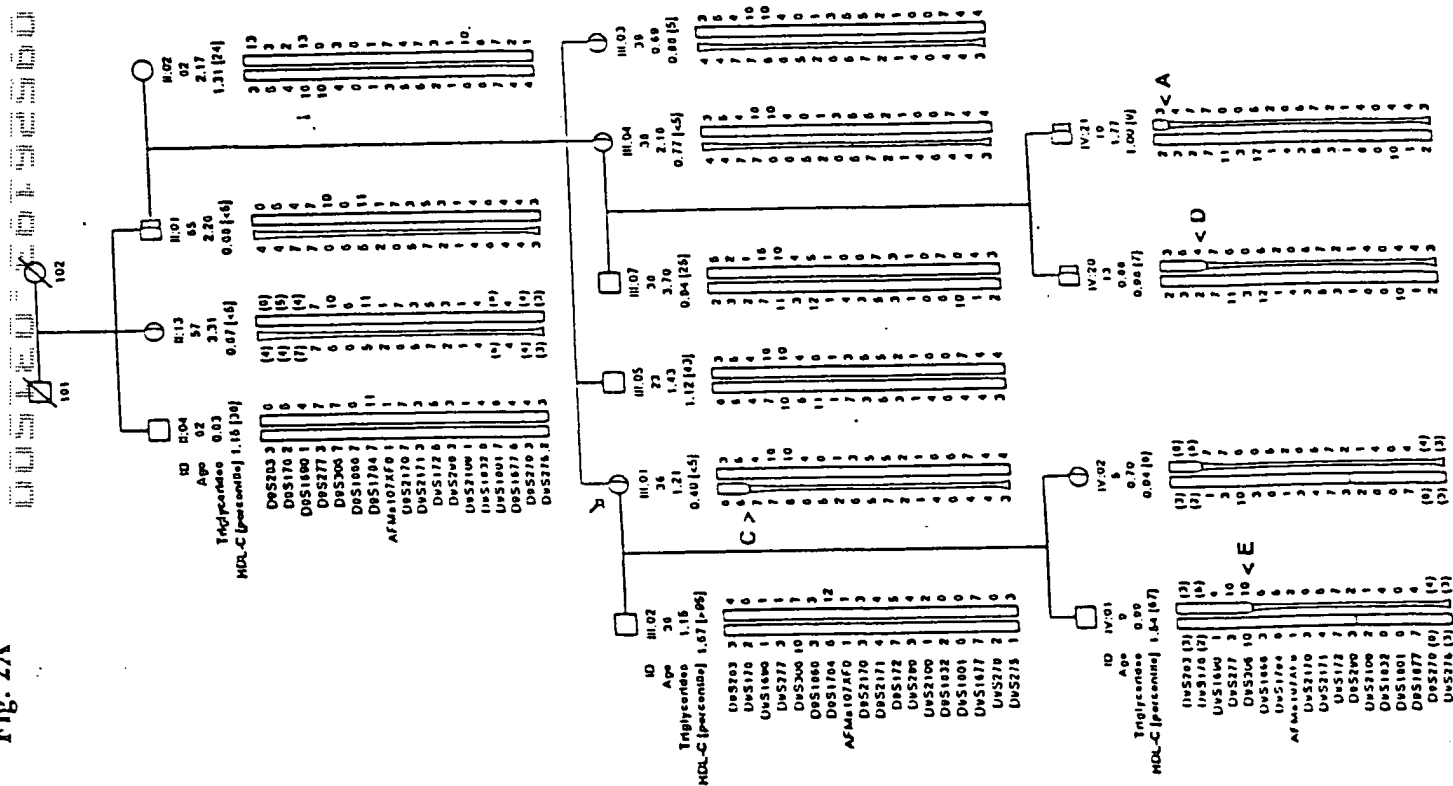
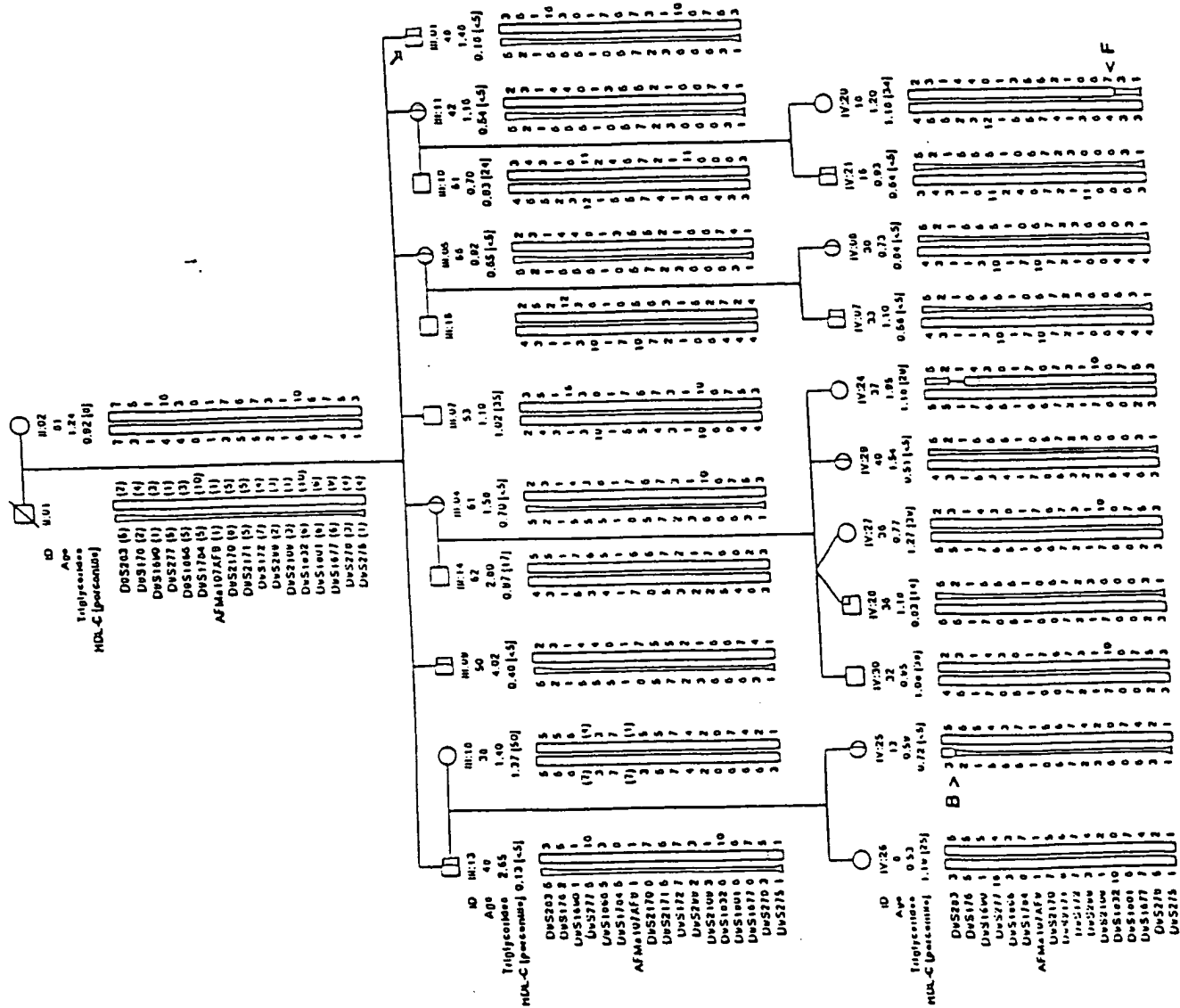


Fig. 2B

Family FHA - 2



Family FHA - 3

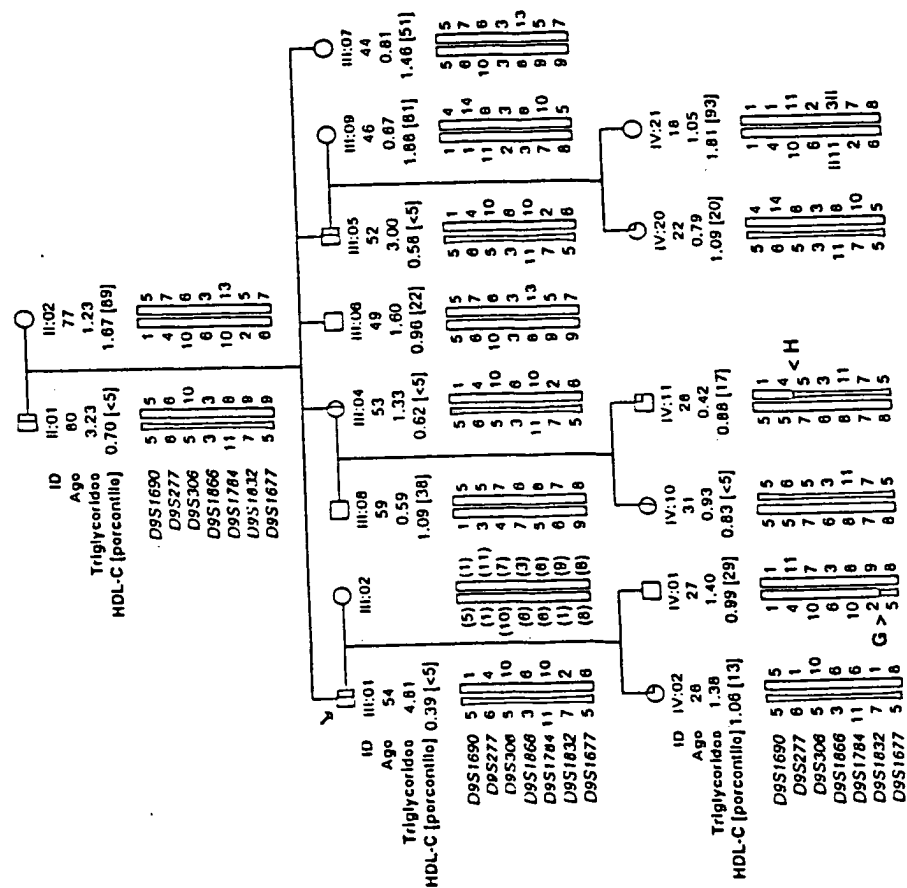
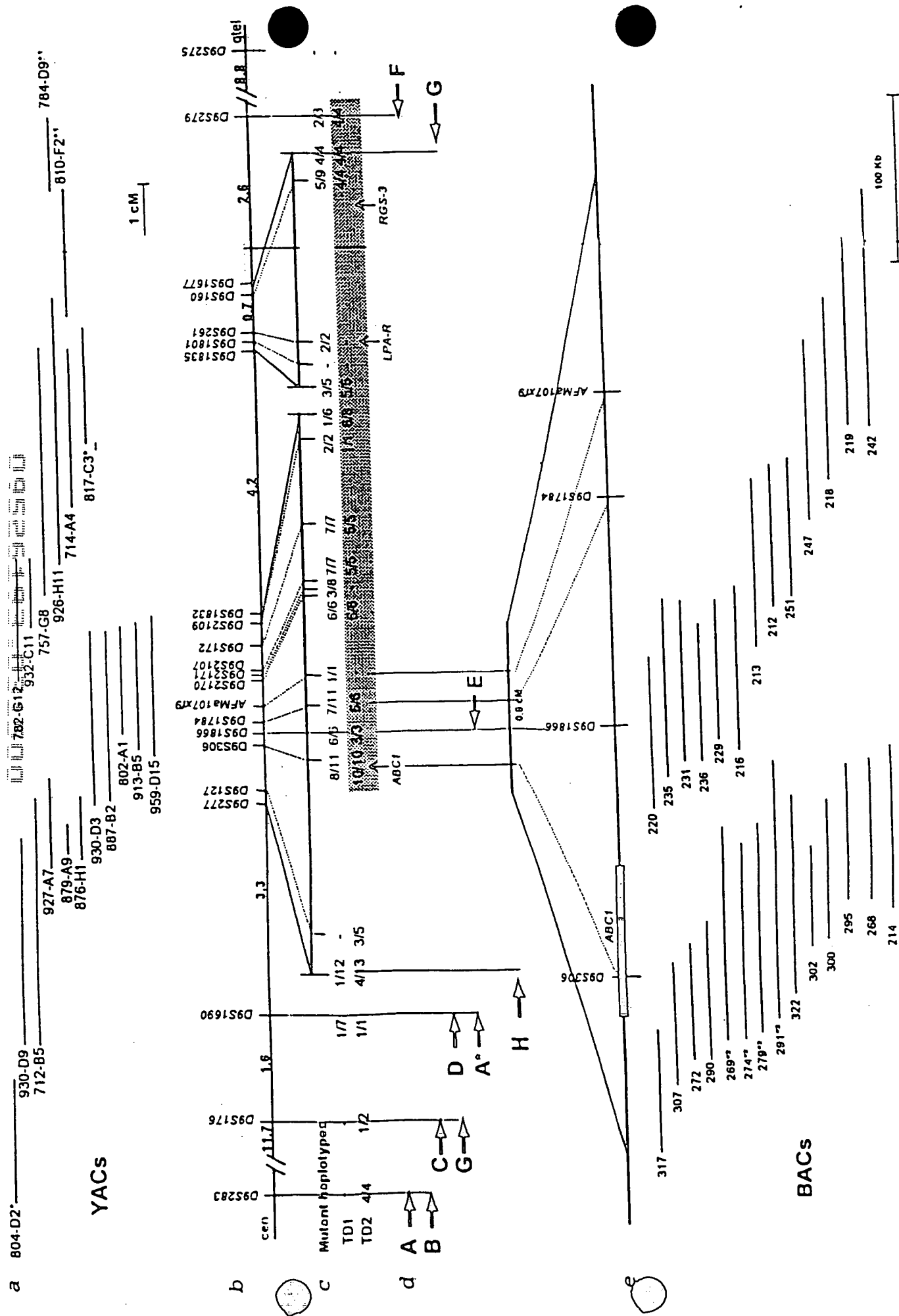


Fig. 2C







# Exon 30 mutation:

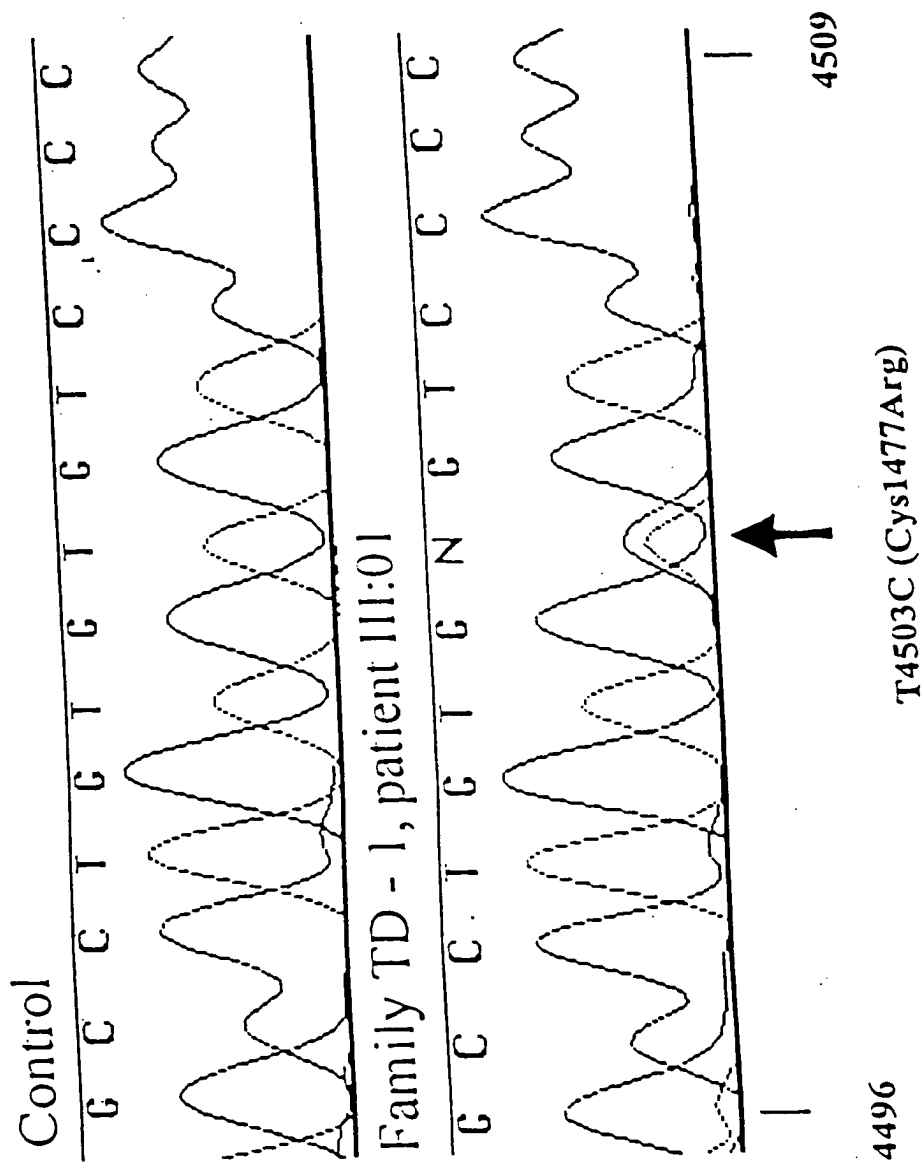


Fig. 4A

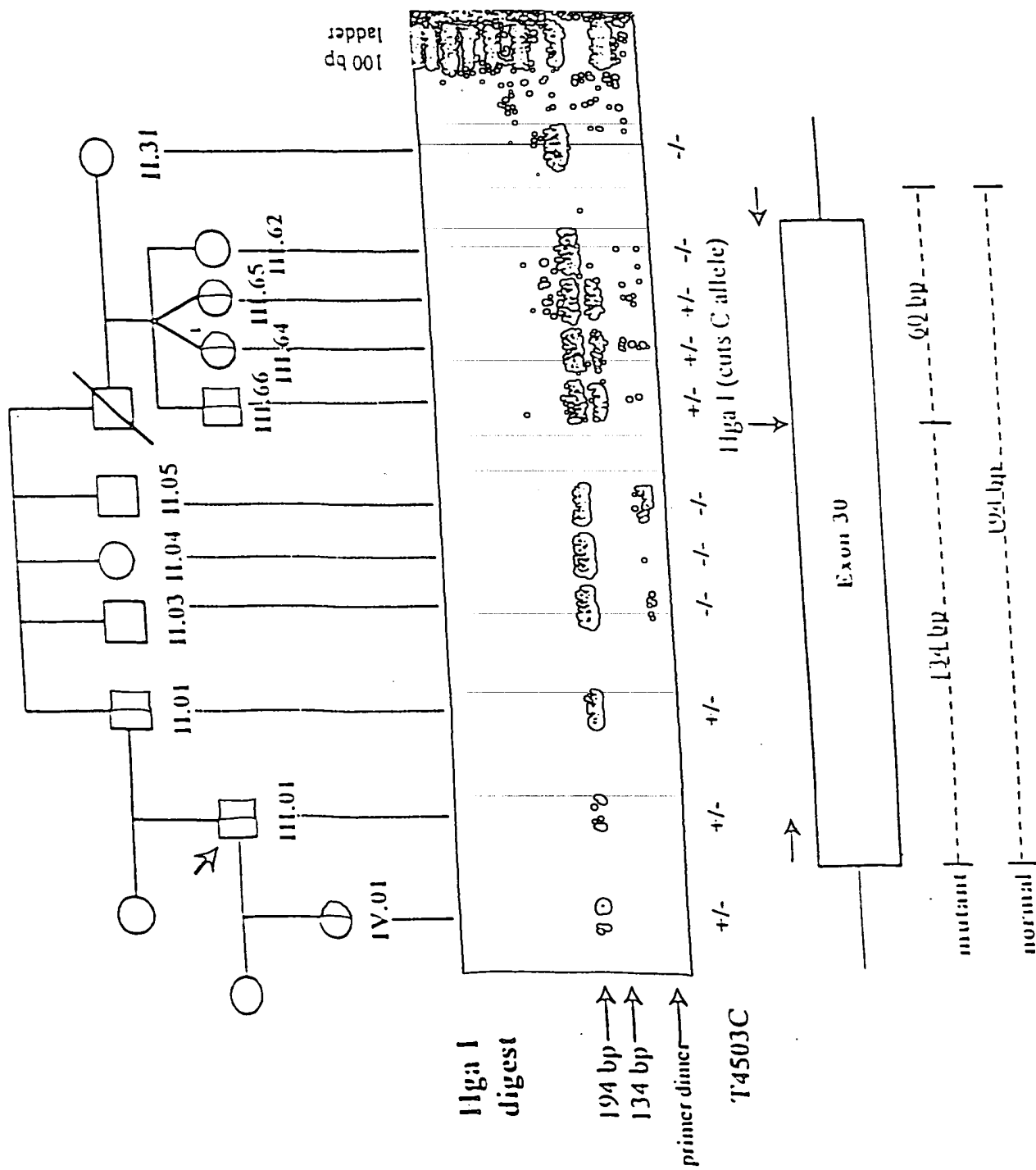
4485 4503 4529

aagaagatgctgcctgtgTgtcccccaggggcaggggggctgcct

R	K	M	L	P	V	C	P	P	G	A	G	G	L	F
R	R	M	L	P	V	C	P	P	G	A	G	G	L	F
R	R	M	L	P	V	R	P	P	G	A	G	G	L	F
-	-	E	L	-	-	-	-	-	-	-	G	G	S	-

aagaagatgctgcctgtgCgtcccccaggggcaggggggctgcct

**Fig. 4B**



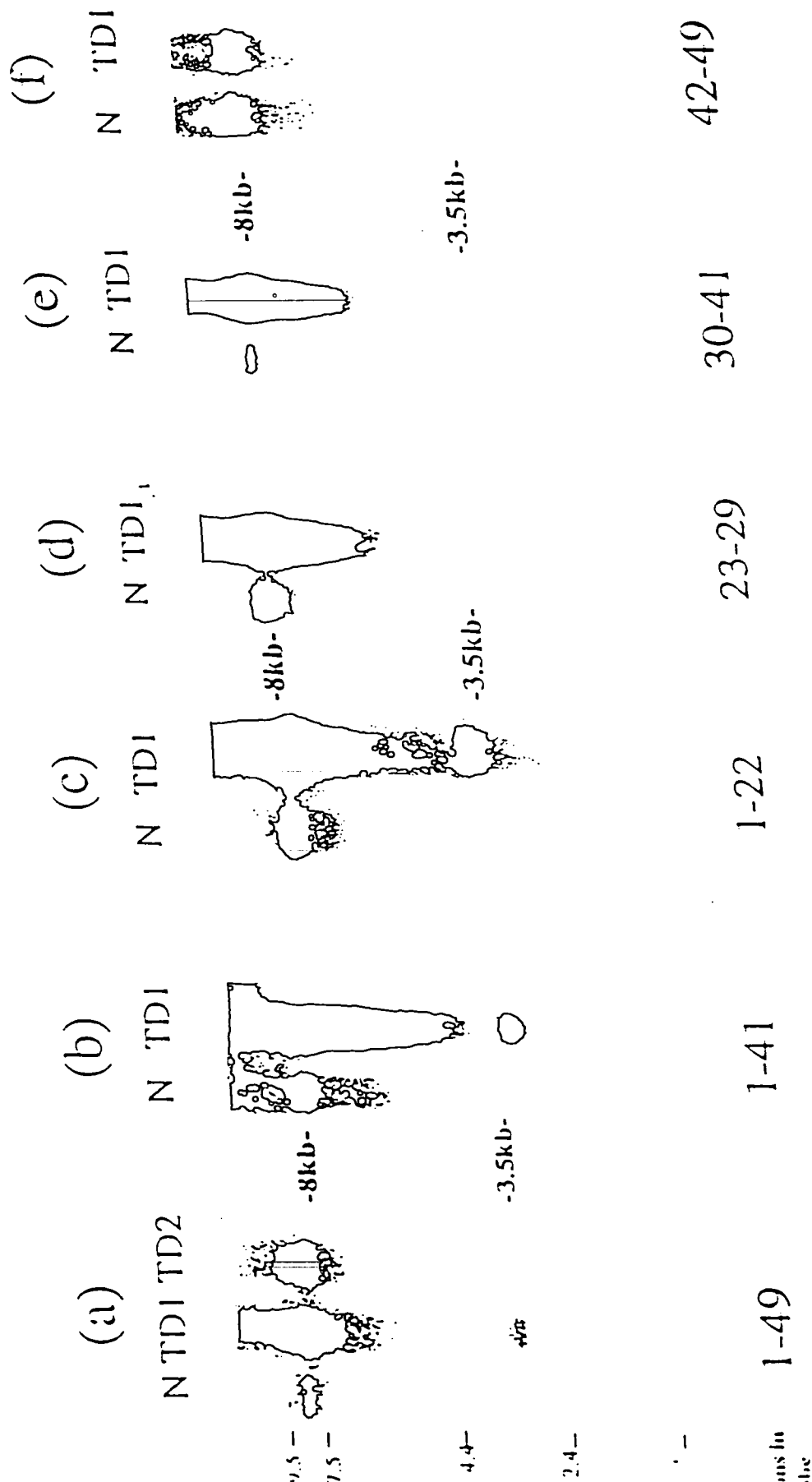


Fig. 4D

Exon 13 mutation:

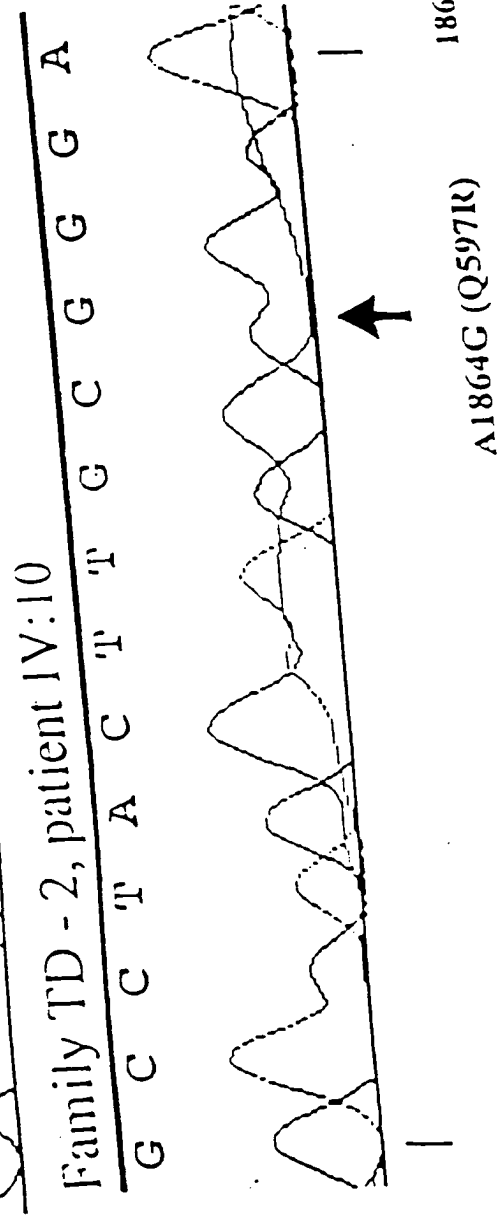
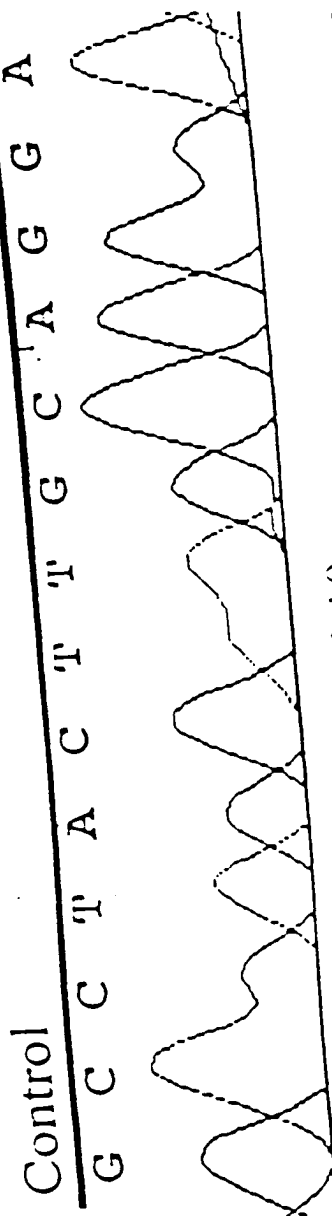


Fig. 5A

Exon 13  
TD-2

1842

1864

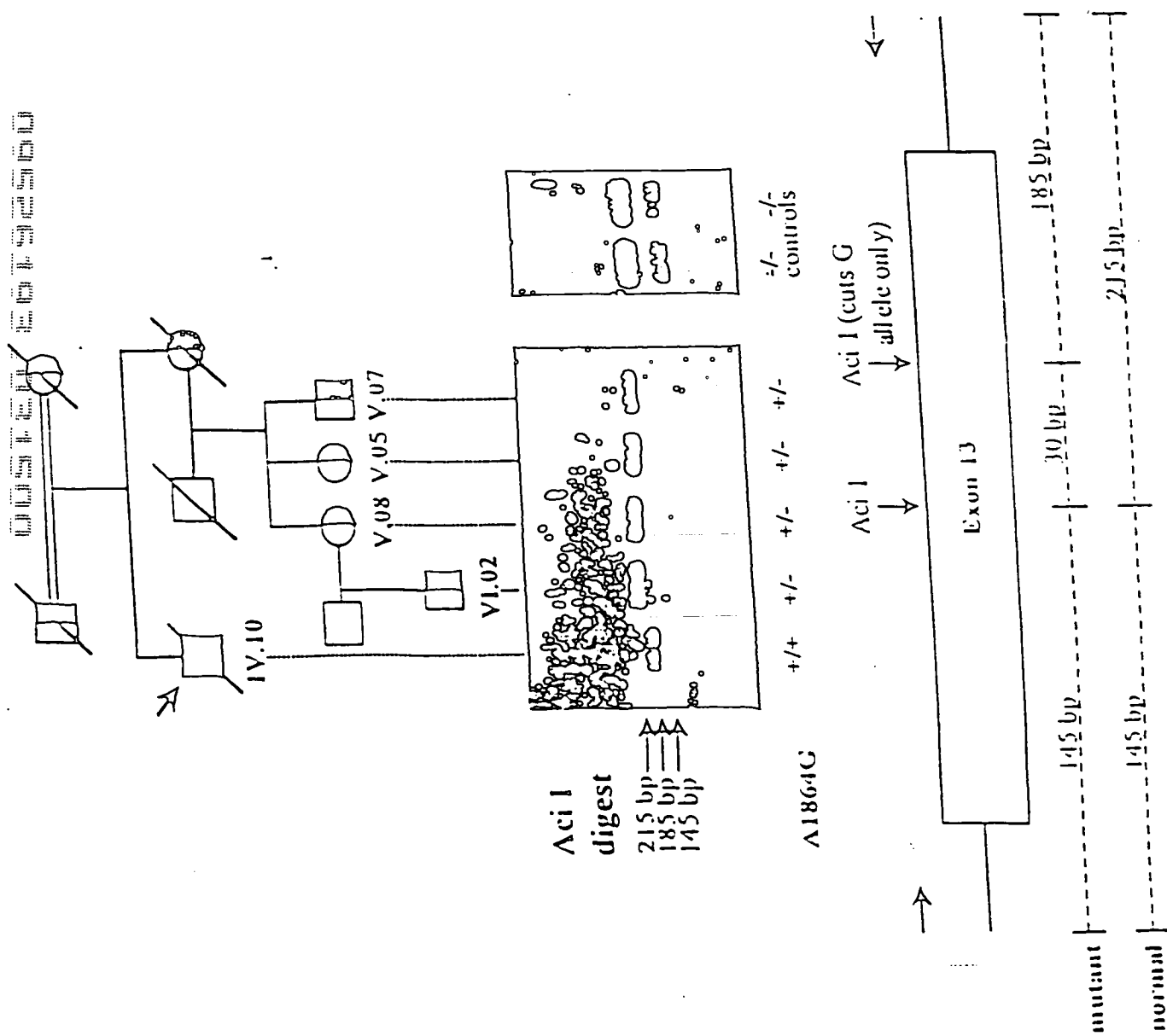
1886

wt sequence  
HUMAN\_ABC1  
MOUSE\_ABC1  
Patient  
CASEL\_ABC  
Patient

```
tgggggggcttcgcctacttgcAggatgtggtggagcaggcaatc
N G G F A Y L Q D V V E Q A I
N G G F A Y L Q D V V E Q A I
N G G F A Y L R D V V E Q A I
- - - F M T V Q R A V D V A I
tgggggggcttcgcctacttgcGggatgtggtggagcaggcaatc
```

Fig. 5B

00510-01500



# Exon 14: FHA - 1, patient III:01

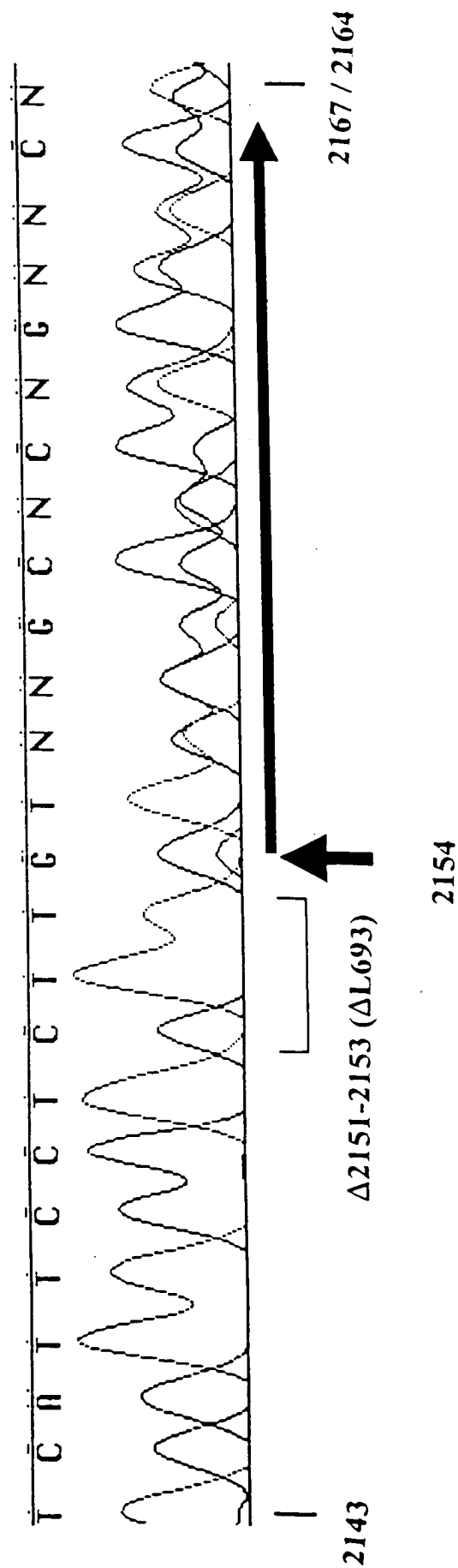


Fig. 6A



Exon 14  
FHA-1

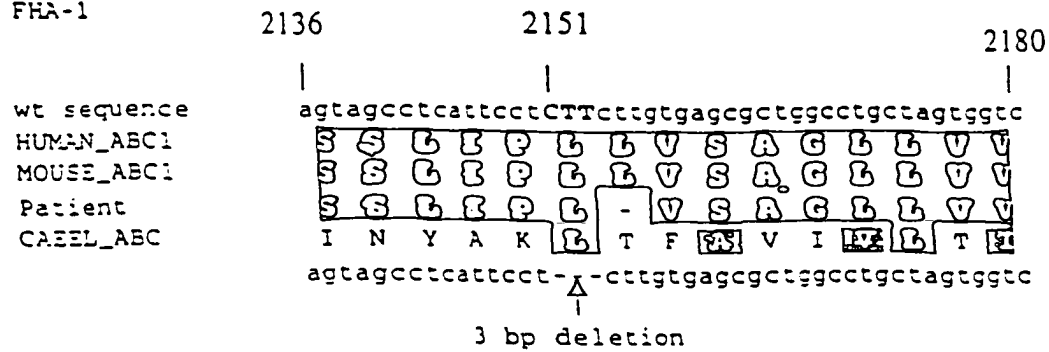


Fig. 6B

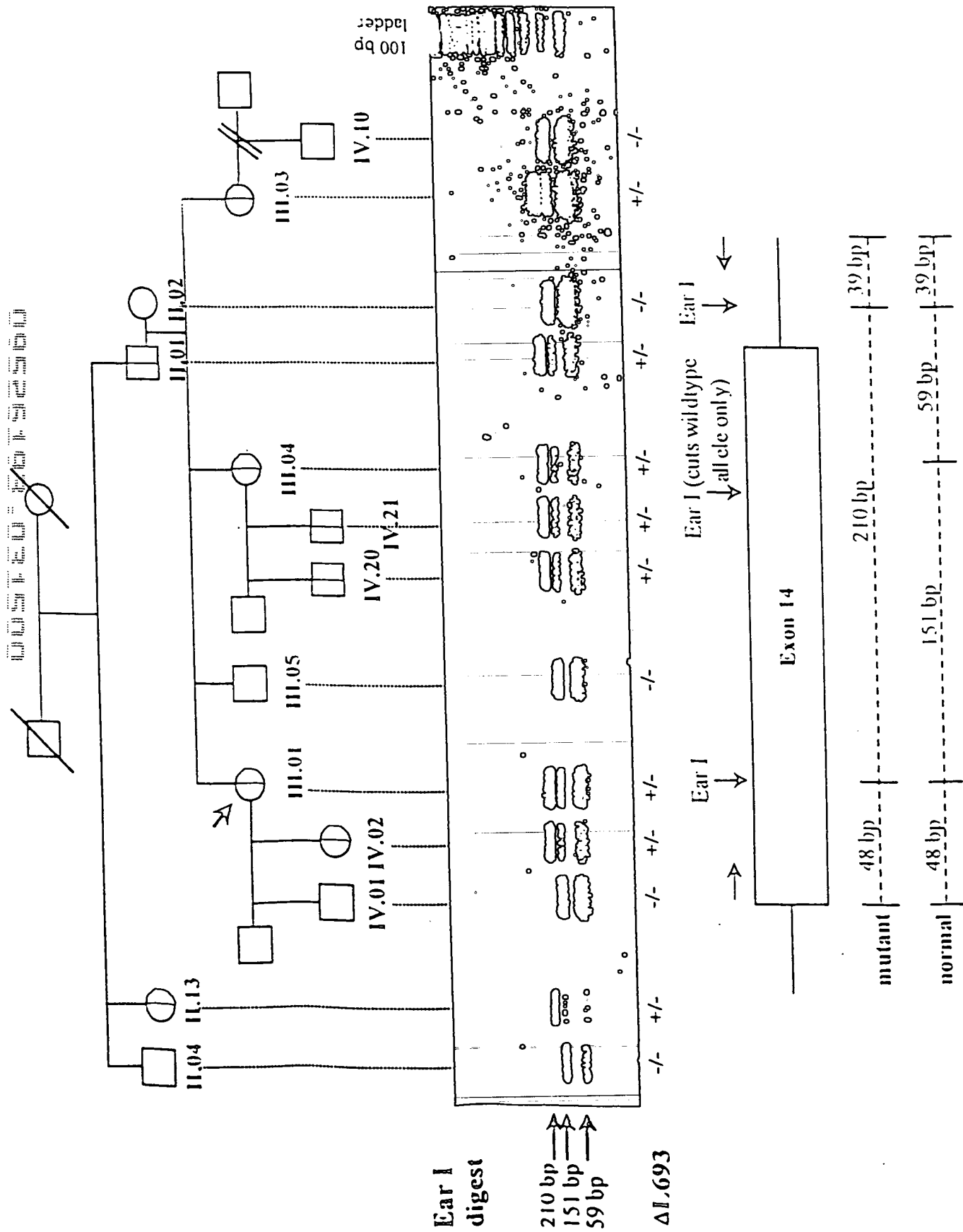


Fig. 6C



Exon 41  
FHA-3

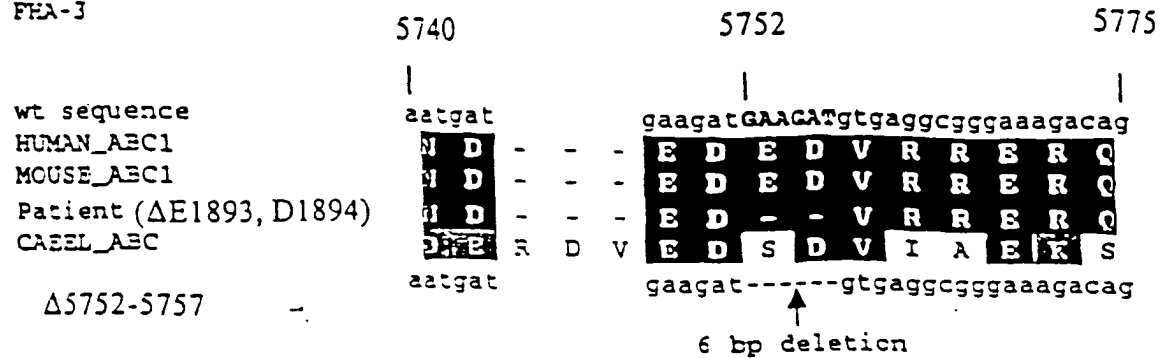
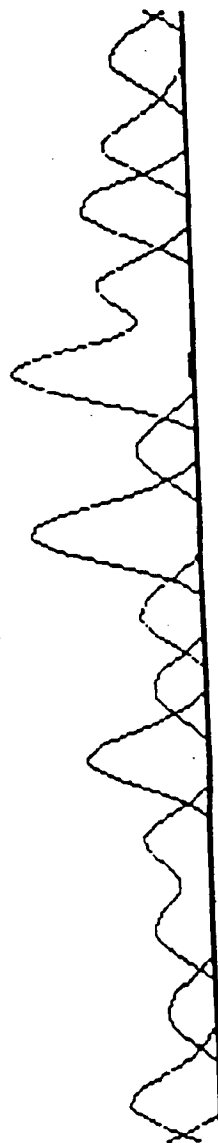


Fig. 6E

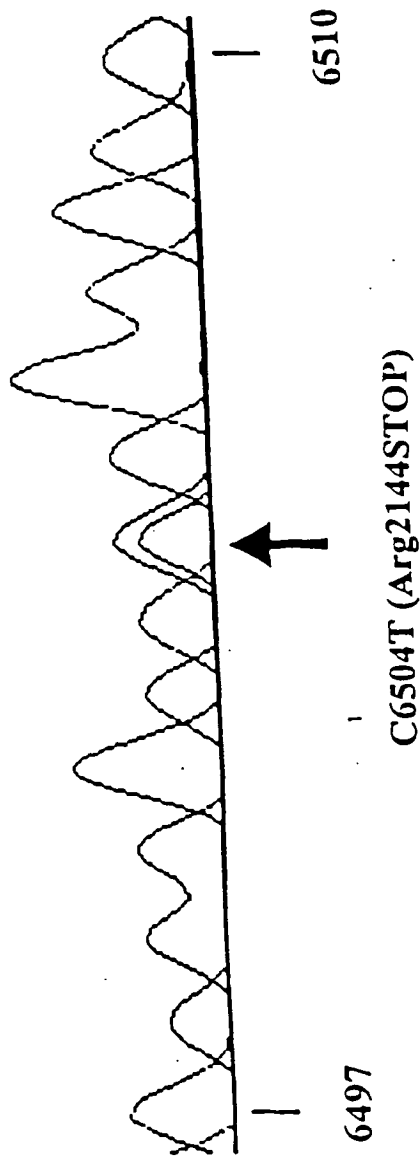
Exon 48 mutation:

# АСТТСТАСЕННИ



Family FHA - 2, patient III:01

0 6 T T C T || N C H ||



**Fig. 6F**

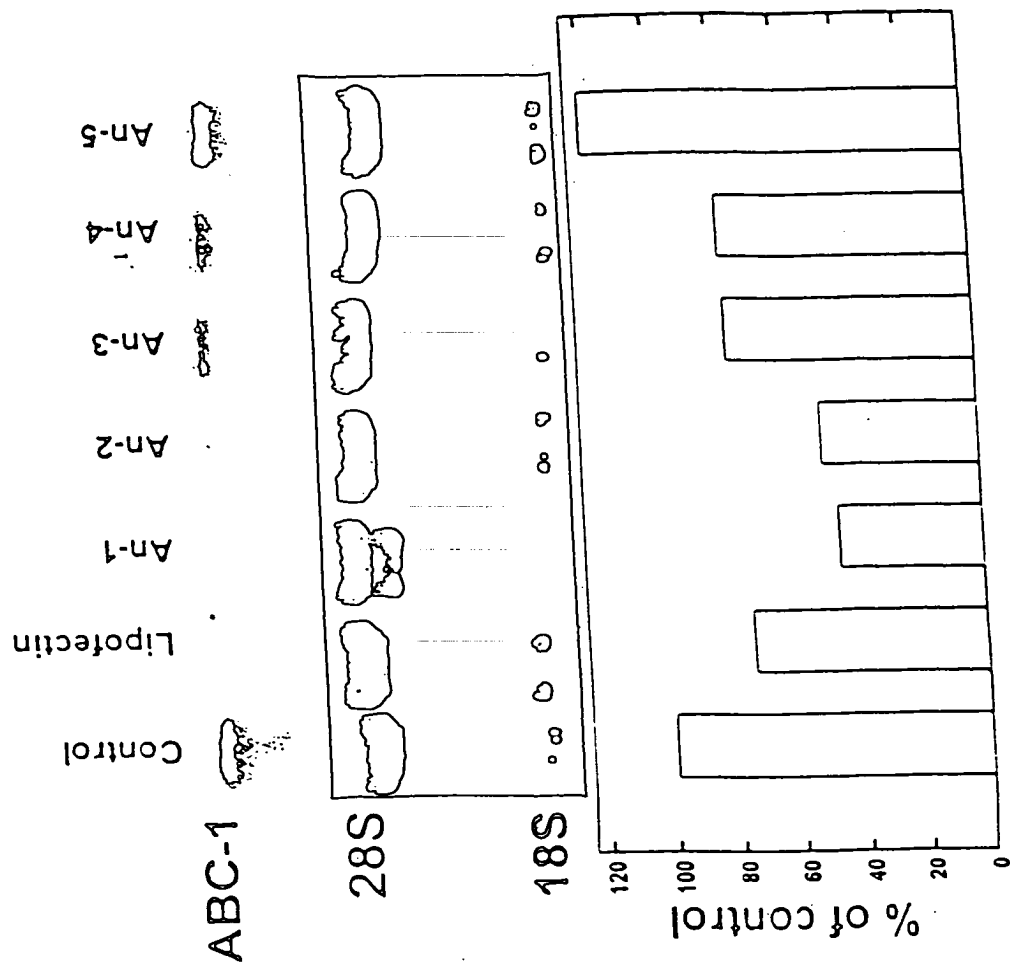


Fig. 7A

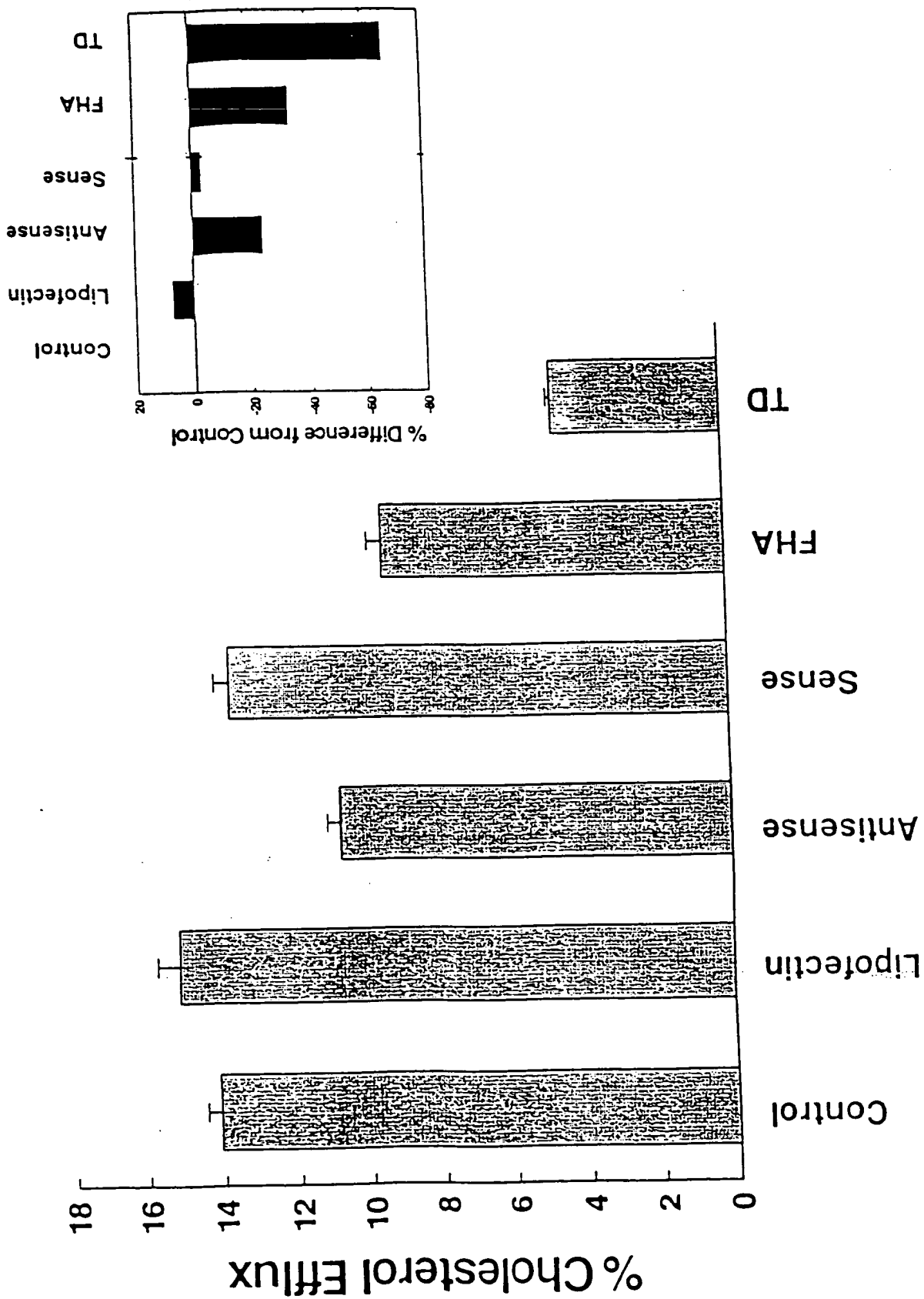


Fig. 7B

Downloaded from www.sciencedirect.com

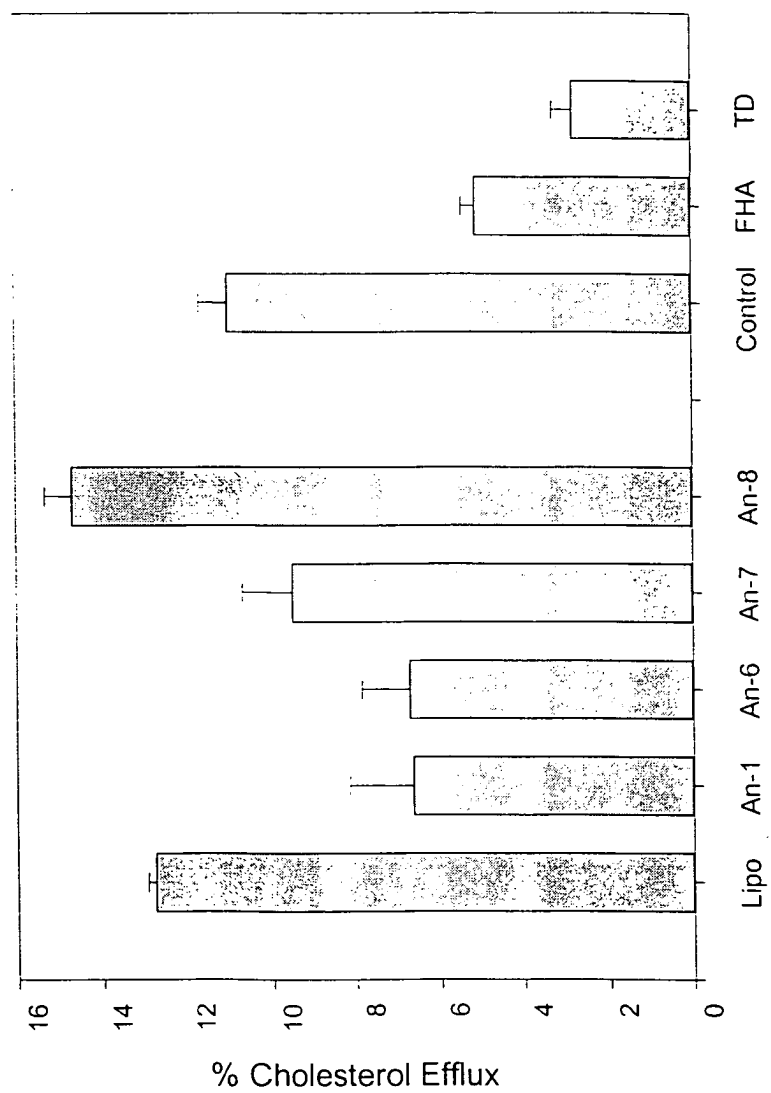


Fig. 7C



## SEQ ID NO: 1

MACWPQLRLLWKNLTFRRRQTCQLLLEVAWPLFIFLILISVRLSYPPYEQHECHFPNKAMPSAGTLPWVQ  
GIICNANNPCFRYPTPGEAPGVVGNFNKSIVARLFSADARRLLYSQKDTSMKDMRKVLRTLQQIKKSSSNL  
KLQDFLVDNETFSGFLYHNLSLPKSTVDKMLRADVILHKVFLQGYQLHLTSLCNGSKSEEMIQLGDQEVSE  
LCGLPREKLAAAERVLRNMDILKPIRLTNSTSPFPSKELAEATKTLHSLGTLAQELFSMRSWSMDMRQE  
VMFLTNVNSSSSSTQIYQAVSRIVCGHPEGGLKIKSLNWYEDNNYKALFGGNGTEEDAETFYDNSTTPYC  
NDLMKNLESSPLSRIIWKALKPLLVGKILYTPDTPATRQVMAEVNKTQELAVFHDLEGMWEELSPKIWTF  
MENSQEMDLVRMLLDSDNDHFWEQQLDGLDWTAQDIVAFLAKHPEDVQSSNGSVYTWREAFNETNQAIRT  
ISRFMECVNLNKLEPIATEVWLINKSMELLDERKFWAGIVFTGITPGSIELPHHVKYKIRMDIDNVERTNK  
IKDGYWDPGPRADPFEDMRYVWGGFAYLQDVVEQAIIRVLTGTEKKTGVYMQMPYPICYVDDIFLRVMSRS  
MPLFMTLAWIYSVAVIIKGIYVEKEARLKETMRIMGLDNSILWFSWFISSLIPLLVSAGLLVILKGNLL  
PYSDPSVVFVFLSVFAVVTILQCFLISTLFSRANLAAACGGIIYFTLYLPVLCVAWQDYVGFTLKIFASL  
LSPVAFGFGCEYFALFEEQGIGVQWDNLFESPVEEDGFNLTTSVSMMLFDTFLYGVMTWYIEAVFPGQYGI  
PRPWYFPCTKSYWFGEESDEKSHPGSNQKRRISEICMEEETHLKLGVSIQNLVKVYRDGMKVAVDGLALNF  
YEQITSFLGHNGAGKTTTMSILTGLFPPTSGTAYILGKDIRSEMSTIRQNLGVCPOHNVLFDMLTVEEHI  
WFIARLKLSEKHVKAEMEOMALDVLGPSSKLKSKTSQLSGGMQRKLSVALAFVGGSKVVILDEPTAGVDP  
YSRRGIWELLLKYRQGRTIILSTHMHDEADVLDGRIAIISHGKLCCVGSSFLKNQLGTGYLTLVKKDVE  
SSLSSCRNSSSTVSYLKEDSVSQSSSDAGLSDHESDTLTIDVSAISNLIRKHVSEARLVEDIGHELTYV  
LPYEAKEGAFVELFHEIDRLSDLGISSYGISETTLEEIFLKVAEESGVDAETSDGTLPARRNRRAFGDK  
QSCLRPFTEDDAADPNDSIDPESRETDLLSGMDGKGSYQVKGWKL TQQQFVALLWKRLLIARRSRKGFFA  
QIVLPAVFVCIALVFSILVPPFGKYPSELEQPMYNEQYTFVSNDAPEDTGTLELLNALT KDPGFGTRCME  
GNPIPDTPCQAGEEEWTTAPVPQTIMDLFQNGNWTM QNPSPACQCSSDKIKKMLPVCPPGAGGLPPPQRKQ  
NTADILQDLTGRNISDYLVKTYVQIIAKSLKNKIWNVEFRYGGFSLGVSNTQALPPSQEVNDAIKQMKKHL  
KLAkdSSADRFLNSLGRFMTGLDTRNNVKVWFNNKGWHAISSFLNVINNAILRANLQKGENPSHYGITAFN  
HPLNLTQQLSEVALMTTSVDVLVVICVIFAMSFVPASFVFLIQERVSKAKHLQFISGVKPVIIYWSNFV  
WDMCNYVVPATLVIIIFICFQOKSYVSSTNLPVLALLLLLYGWSITPLMYPASFVFKIPSTAYVVLTSVNL  
FIGINGSVATFVLELFTDNKLNNDILKSVFLIFPHFCLGRGLIDMVKNQAMADALERFGENRFVSPLSW  
DLVGRNLFAMAVEGVVFFLITVLIQYRFFIRPRPVNAKLSPLNDEDEDVRRERQRILDGGGQNDILEIKEL  
TKIYRRKRKPAVDRI CVGIPPGEFCGLLGVNGAGKSSTFKMLTGD TTVTRGDAFLNKN SILSNIHEVHQM  
GYCPQFDAITELLTGREHVEFFALLRGVPEKEVGKVGWAIKRLGLVKYGEKYAGNYSGGNKRKLSTAMAL  
IGGPPVVFLDEPTTGMDPKARRFLWNCALSVVKEGRSVVLTSHSMEECEALCTRMAIMVNGRFRCLG SVQH  
LKNRFGDGYTIVVRIAGSNPDLKPVQDFFGLAFPGSVLKEKHRNMLQYQLPSSLSSLARIFSILS QSKKRL  
HIEDYSVSQTTLDQVFNFAKDQSDDDHLKDL SLHKNQTVVDVAVLTSFLQDEKV KESYV\*

Fig. 9A

SEQ ID NO: 2

GTCCCTGCTGTGAGCTCTGGCCGCTGCCTTCCAGGGCTCCCGAGCCACACGCTGGGGGTG  
CTGGCTGAGGGAACATGGCTTGTGGCCTCAGCTGAGGTTGCTGCTGTGGAAGAACCTCA  
CTTTCAGAAGAAGACAAACATGTCAGCTGTTACTGGAAGTGGCCTGGCCTCTATTTATCT  
TCCTGATCCTGATCTCTGTTTCGGCTGAGCTACCCACCCTATGAACAACATGAATGCCATT  
TTCCAAATAAAGCCATGCCCTCTGCAGGAACACTTCCTTGGGTTCAGGGGATTATCTGTA  
ATGCCAACAACCCCTGTTTCCGTTACCCGACTCCTGGGGAGGCTCCCGAGTTGTTGGAA  
ACTTTAACAATCCATTGTGGCTCGCCTGTTCTCAGATGCTCGGAGGCTTCTTTTATACA  
GCCAGAAAGACACCAGCATGAAGGACATGCGCAAAGTTCTGAGAACATTACAGCAGATCA  
AGAAATCCAGCTCAAACCTTGAAGCTTCAAGATTTCTGTGGACAATGAAACCTTCTCTG  
GGTTCCTGTATCACAACCTCTCTCTCCCAAAGTCTACTGTGGACAAGATGCTGAGGGCTG  
ATGTCATTCTCCACAAGGTATTTTGAAGGCTACCAGTTACATTGACAAGTCTGTGCA  
ATGGATCAAAATCAGAAGAGATGATTCAACTTGGTGACCAAGAAGTTTCTGAGCTTTGTG  
GCCTACCAAGGGAGAACTGGCTGCAGCAGAGCGAGTACTTCGTTCCAACATGGACATCC  
TGAAGCCAATCCTGAGAACACTAACTCTACATCTCCCTTCCCGAGCAAGGAGCTGGCTG  
AAGCCACAAAAACATTGCTGCATAGTCTTGGGACTCTGGCCCAGGAGCTGTTTCAGCATGA  
GAAGCTGGAGTGACATGCGACAGGAGGTGATGTTTCTGACCAATGTGAACAGCTCCAGCT  
CCTCCACCCAAATCTACCAGGCTGTGTCTCGTATTGTCTGCGGGCATCCCGAGGGAGGGG  
GGCTGAAGATCAAGTCTCTCAACTGGTATGAGGACAACAACCTACAAAGCCCTCTTTGGAG  
GCAATGGCACTGAGGAAGATGCTGAAACCTTCTATGACAACCTCTACAACCTCCTTACTGCA  
ATGATTGATGAAGAAATTTGGAGTCTAGTCTCTTTCCCGCATTATCTGGAAAGCTCTGA  
AGCCGCTGCTCGTTGGGAAGATCCTGTATACACCTGACACTCCAGCCACAAGGCAGGTCA  
TGGCTGAGGTGAACAAGACCTTCCAGGAACCTGGCTGTGTTCCATGATCTGGAAGGCATGT  
GGGAGGAACTCAGCCCCAAGATCTGGACCTTCATGGAGAACAGCCAAGAAATGGACCTTG  
TCCGGATGCTGTTGGACAGCAGGGACAATGACCCTTTTGGGAACAGCAGTTGGATGGCT  
TAGATTGGACAGCCCAAGACATCGTGGCGTTTTTGGCCAAGCACCCAGAGGATGTCCAGT  
CCAGTAATGGTTCTGTGTACACCTGGAGAGAAGCTTTCAACGAGACTAACCAGGCAATCC  
GGACCATATCTCGCTTCATGGAGTGTGTCAACCTGAACAAGCTAGAACCCATAGCAACAG  
AAGTCTGGCTCATCAACAAGTCCATGGAGCTGCTGGATGAGAGGAAGTTCTGGGCTGGTA  
TTGTGTTCACTGGAATTACTCCAGGCAGCATTGAGCTGCCCCATCATGTCAAGTACAAGA  
TCCGAATGGACATTGACAATGTGGAGAGGACAAATAAAATCAAGGATGGGTACTGGGACC  
CTGGTCCTCGAGCTGACCCCTTTGAGGACATGCGGTACGTCTGGGGGGGCTTCGCCTACT  
TGCAGGATGTGGTGGAGCAGGCAATCATCAGGGTGCTGACGGGCACCGAGAAGAAAACCTG

Fig. 9B

GTGTCTATATGCAACAGATGCCCTATCCCTGTTACGTTGATGACATCTTTCTGCGGGTGA  
TGAGCCGGTCAATGCCCCCTCTTCATGACGCTGGCCTGGATTTACTCAGTGGCTGTGATCA  
TCAAGGGCATCGTGTATGAGAAGGAGGCACGGCTGAAAGAGACCATGCGGATCATGGGCC  
TGGACAACAGCATCCTCTGGTTTAGCTGGTTCATTAGTAGCCTCATTCTCTCTTGTGA  
GCGCTGGCCTGCTAGTGGTCATCCTGAAGTTAGGAAACCTGCTGCCCTACAGTGATCCCA  
GCGTGCTGTTTGTCTTCTGTCCGTGTTTGCTGTGGTGACAATCCTGCAGTGCTTCCTGA  
TTAGCACACTCTTCTCCAGAGCCAACCTGGCAGCAGCCTGTGGGGGCATCATCTACTTCA  
CGCTGTACCTGCCCTACGTCCTGTGTGTGGCATGGCAGGACTACGTGGGCTTCACACTCA  
AGATCTTCGCTAGCCTGCTGTCTCCTGTGGCTTTTGGGTTTGGCTGTGAGTACTTTGCCC  
TTTTTGAGGAGCAGGGCATTGGAGTGCAGTGGGACAACCTGTTTGAGAGTCTGTGGAGG  
AAGATGGCTTCAATCTCACCCTTCGGTCTCCATGATGCTGTTTGACACCTTCCTCTATG  
GGGTGATGACCTGGTACATTGAGGCTGTCTTCCAGGCCAGTACGGAATTCCCAGGCCCT  
GGTATTTTCTTGCACCAAGTCCTACTGGTTTGGCGAGGAAAGTGATGAGAAGAGCCACC  
CTGGTTCCAACCAGAAGAGAATATCAGAAATCTGCATGGAGGAGGAACCCACCCACTTGA  
AGCTGGGCGTGTCCATTGAGAACCTGGTAAAAGTCTACCGAGATGGGATGAAGGTGGCTG  
TCGATGGCCTGGCACTGAATTTTATGAGGGCCAGATCACCTCCTTCTGGGCCACAATG  
GAGCGGGGAAGACGACCACCATGTCAATCCTGACCGGGTGTTCCTCCCGACCTCGGGCA  
CCGCTTACATCCTGGGAAAAGACATTGCTCTGAGATGAGCACCATCCGGCAGAACCTGG  
GGGTCTGTCCCCAGCATAACGTGCTGTTTGACATGCTGACTGTGGAAGAACACATCTGGT  
TCTATGCCCCGCTTGAAAGGGCTCTCTGAGAAGCACGTGAAGGCGGAGATGGAGCAGATGG  
CCCTGGATGTTGGTTTGCCATCAAGCAAGCTGAAAAGCAAAACAAGCCAGCTGTCAGGTG  
GAATGCAGAGAAAGCTATCTGTGGCCTTGGCCTTTGTGCGGGGATCTAAGGTTGTCAATC  
TGGATGAACCCACAGCTGGTGTGGACCCTTACTCCCGCAGGGGAATATGGGAGCTGCTGC  
TGAAATACCGACAAGGCCGCACCATTATTCTCTCTACACACCACATGGATGAAGCGGACG  
TCCTGGGGGACAGGATTGCCATCATCTCCCATGGGAAGCTGTGCTGTGTGGGCTCCTCCC  
TGTTTCTGAAGAACCAGCTGGGAACAGGCTACTACCTGACCTTGGTCAAGAAAGATGTGG  
AATCCTCCCTCAGTTCCTGCAGAAACAGTAGTAGCACTGTGTCAATACCTGAAAAAGGAGG  
ACAGTGTTTCTCAGAGCAGTTCCTGATGCTGGCCTGGGCAGCGACCATGAGAGTGACACGC  
TGACCATCGATGTCTCTGCTATCTCCAACCTCATCAGGAAGCATGTGTCTGAAGCCCGGC  
TGGTGGGAAGACATAGGGCATGAGCTGACCTATGTGCTGCCATATGAAGCTGCTAAGGAGG  
GAGCCTTTGTGGAACCTCTTTCATGAGATTGATGACCGGCTCTCAGACCTGGGCATTTCTA  
GTTATGGCATCTCAGAGACGACCCTGGAAGAAATATTCCTCAAGGTGGCCGAAGAGAGTG  
GGGTGGATGCTGAGACCTCAGATGGTACCTTGCCAGCAAGACGAAACAGGCGGGCCTTCG  
GGGACAAGCAGAGCTGTCTTCGCCCCTTCACTGAAGATGATGCTGCTGATCCAAATGATT

Fig. 9C

CTGACATAGACCCAGAATCCAGAGAGACAGACTTGCTCAGTGGGATGGATGGCAAAGGGT  
CCTACCAGGTGAAAGGCTGGAACTTACACAGCAACAGTTTGTGGCCCTTTTGTGGAAGA  
GACTGCTAATTGCCAGACGGAGTCGGAAAGGATTTTTTGCTCAGATTGTCTTGCCAGCTG  
TGTTTGTCTGCATTGCCCTTGTGTTTCAGCCTGATCGTGCCACCCTTTGGCAAGTACCCCA  
GCCTGGAACCTTCAGCCCTGGATGTACAACGAACAGTACACATTTGTCAGCAATGATGCTC  
CTGAGGACACGGGAACCTTGGAACCTTAAACGCCCTCACCAAAGACCCTGGCTTCGGGA  
CCCGCTGTATGGAAGGAAACCCAATCCCAGACACGCCCTGCCAGGCAGGGGAGGAAGAGT  
GGACCACTGCCCCAGTTCCCCAGACCATCATGGACCTCTTCCAGAATGGGAACTGGACAA  
TGCAGAAACCTTCACCTGCATGCCAGTGTAGCAGCGACAAAATCAAGAAGATGCTGCCTG  
TGTGTCCCCCAGGGGCAGGGGGGCTGCCTCCTCCACAAAGAAAACAAAACACTGCAGATA  
TCCTTCAGGACCTGACAGGAAGAAACATTTCCGATTATCTGGTGAAGACGTATGTGCAGA  
TCATAGCCAAAAGCTTAAAGAACAAGATCTGGGTGAATGAGTTTAGGTATGGCGGCTTTT  
CCCTGGGTGTCTAGTAATACTCAAGCACTTCCTCCGAGTCAAGAAGTTAATGATGCCATCA  
AACAAATGAAGAAACACCTAAAGCTGGCCAAGGACAGTTCTGCAGATCGATTTCTCAACA  
GCTTGGGAAGATTTATGACAGGACTGGACACCAGAAATAATGTCAAGGTGTGGTTCAATA  
ACAAGGGCTGGCATGCAATCAGCTCTTTCCTGAATGTCATCAACAATGCCATTCTCCGGG  
CCAACCTGCAAAAAGGGAGAGAACCCTAGCCATTATGGAATTACTGCTTTCAATCATCCCC  
TGAATCTCACCAAGCAGCAGCTCTCAGAGGTGGCTCTGATGACCACATCAGTGGATGTCC  
TTGTGTCCATCTGTGTCTCTTTGCAATGTCCTTCGTCCCAGCCAGCTTTGTCTGATTCC  
TGATCCAGGAGCGGGTCAGCAAAGCAAAACACCTGCAGTTCATCAGTGGAGTGAAGCCTG  
TCATCTACTGGCTCTCTAATTTTGTCTGGGATATGTGCAATTACGTTGTCCCTGCCACAC  
TGGTCATTATCATCTTCATCTGCTTCCAGCAGAAGTCCTATGTGTCCTCCACCAATCTGC  
CTGTGCTAGCCCTTCTACTTTTGTCTGTATGGGTGGTCAATCACACCTCTCATGTACCCAG  
CCTCCTTTGTGTTCAAGATCCCCAGCACAGCCTATGTGGTGCTCACCAGCGTGAACCTCT  
TCATTGGCATTAAATGGCAGCGTGGCCACCTTTGTGCTGGAGCTGTTACCGACAATAAGC  
TGAATAATATCAATGATATCCTGAAGTCCGTGTTCTTGATCTTCCCACATTTTGCCTGG  
GACGAGGGCTCATCGACATGGTGAAAAACCAGGCAATGGCTGATGCCCTGGAAAGGTTTG  
GGGAGAATCGCTTTGTGTACACATTATCTTGGGACTTGGTGGGACGAAACCTCTTCGCCA  
TGGCCGTGGAAGGGGTGGTGTCTTCTCCTCATTACTGTTCTGATCCAGTACAGATTCTTCA  
TCAGGCCCAGACCTGTAAATGCAAAGCTATCTCCTCTGAATGATGAAGATGAAGATGTGA  
GGCGGGAAAGACAGAGAATTCTTGATGGTGGAGGCCAGAATGACATCTTAGAAATCAAGG  
AGTTGACGAAGATATATAGAAGGAAGCGGAAGCCTGCTGTTGACAGGATTTGCGTGGGCA  
TTCCTCCTGGTGAGTGCTTTGGGCTCCTGGGAGTTAATGGGGCTGGAAAATCATCAACTT  
TCAAGATGTTAACAGGAGATACCACTGTTACCAGAGGAGATGCTTTCCTTAACAAAATA

Fig. 9D

GTATCTTATCAAACATCCATGAAGTACATCAGAACATGGGCTACTGCCCTCAGTTTGATG  
CCATCACAGAGCTGTTGACTGGGAGAGAACACGTGGAGTTCTTTGCCCTTTTGAGAGGAG  
TCCCAGAGAAAGAAGTTGGCAAGGTTGGTGAGTGGGCGATTTCGGAACTGGGCCTCGTGA  
AGTATGAGAGAAAAATATGCTGGTAACTATAGTGGAGGCAACAAACGCAAGCTCTCTACAG  
CCATGGCTTTGATCGGCGGGCCTCCTGTGGTGTTCCTGGATGAACCCACCACAGGCATGG  
ATCCCAAGCCCCGGCGGTTCTTGTGGAATTGTGCCCTAAGTGTGTCAAGGAGGGGAGAT  
CAGTAGTGCTTACATCTCATAGTATGGAAGAATGTGAAGCTCTTTGCACTAGGATGGCAA  
TCATGCTCAATGGAAGGTTTCAGGTGCCTTGGCAGTGTCCAGCATCTAAAAATAGGTTTG  
GAGATGTTTATACAATAGTTGTACGAATAGCAGGGTCCAACCCGGACCTGAAGCCTGTCC  
AGGATTTCTTTGGACTTGCATTTCTTGAAGTGTCTAAAAGAGAAACACCGGAACATGC  
TACAATACCAGCTTCCATCTTCATTATCTTCTCTGCCAGGATATTTCAGCATCCTCTCCC  
AGAGCAAAAAGCGACTCCACATAGAAGACTACTCTGTTTCTCAGACAACACTTGACCAAG  
TATTTGTGAACTTTGCCAAGGACCAAGTGATGATGACCACTTAAAAGACCTCTCATTAC  
ACAAAAACCAGACAGTAGTGGACGTTGCAGTTCTCACATCTTTTCTACAGGATGAGAAAG  
TGAAAGAAAGCTATGTATGAAGAATCCTGTTTATACGGGGTGGCTGAAAGTAAAGAGGAA  
CTAGACTTTCCTTTGCACCATGTGAAGTGTGTGGAGAAAAGAGCCAGAAGTTGATGTGG  
GAAGAAGTAAACTGGATACTGTACTGATACTATTCAATGCAATGCAATTCAATGCAATGA  
AAACAAAATTCCATTACAGGGGCAGTGCCTTTGTAGCCTATGTCTTGTATGGCTCTCAAG  
TGAAAGACTTGAATTTAGTTTTTTTACCTATACCTATGTGAACTCTATTATGGAACCCAA  
TGGACATATGGGTTTGAACCTCACACTTTTTTTTTTTTTTTTTTTTGTTCCTGTGTATTCTCATT  
GGGGTTGCAACAATAATTCATCAAGTAATCATGGCCAGCGATTATTGATCAAAATCAAAA  
GGTAATGCACATCCTCATTCACTAAGCCATGCCATGCCAGGAGACTGGTTTCCCGGTGA  
CACATCCATTGCTGGCAATGAGTGTGCCAGAGTTATTAGTGCCAAGTTTTTTCAGAAAGTT  
TGAAGCACCATGGTGTGTCTGCTCACTTTTGTGAAAGCTGCTCTGCTCAGAGTCTATCA  
ACATTGAATATCAGTTGACAGAATGGTGCCATGCGTGGCTAACATCCTGCTTTGATTCCC  
TCTGATAAGCTGTTCTGGTGGCAGTAACATGCAACAAAAATGTGGGTGTCTCCAGGCACG  
GGAACTTGGTTCCATTGTTATATTGTCTATGCTTCGAGCCATGGGTCTACAGGGTCAT  
CCTTATGAGACTCTTAATATACTTAGATCCTGGTAAGAGGCAAAGAATCAACAGCCAAA  
CTGCTGGGGCTGCAACTGCTGAAGCCAGGGCATGGGATTAAAGAGATTGTGCGTTCAAAC  
CTAGGGAAGCCTGTGCCCATTTGTCTGACTGTCTGCTAACATGGTACACTGCATCTCAA  
GATGTTTATCTGACACAAGTGTATTATTTCTGGCTTTTTGAATTAATCTAGAAAATGAAA

Fig. 9E

Exon	Exon Forward Primer (bp)	SEQ ID No.	Reverse Primer	SEQ ID No.	Intron (kb)	Intron (kb)
exon 1	140 GGC TGGAT TAGCAGTCCCTCA	70	A TCCCAAC TCAAAACACCA	119	intron 1	> 6.413
exon 2	94 GGATTTCCAGTATCCAGTG	71	AAGTCCAAATTTAGCCAGTT	120	intron 2	> 4.241
exon 3	142 GACAGACTTGGCATGAAGCA	72	CAGCCACTTGAATTTCTCC	121	intron 3	> 1.248 (1.6)
exon 4	119 GCATTTGGCAGTCACTTCTG	73	GGTGACGGTCAATTTCCAAT	122	intron 4	> 1.512
exon 5	122 GCTTTCACACTGCTCCCTT	74	CCCTTTCACCACTTACAA	123	intron 5	> 1.769 (3)
exon 6	177 ACTCAAGACCCAGCTCC	75	TGTTCAAGGAAAAGCCTCAC	124	intron 6	> 2.726 (10)
exon 7	93 TCGGTTCTTGTTTAACTCA	76	AGSACCTCTTGCAGACTCA	125	intron 7	4.957
exon 8	241 TCCCAAGGCTTTGAGATGAC	77	AGGAGATACACAGGCCAAG	126	intron 8	> 2.311 (2.5)
exon 9	140 GGTCAAAAGCCCTTGTA	78	GGCTCAACCTCTGAAGCTACC	127	intron 9	0.332
exon 10	117 GCTGCTGTAGGGGTATCT	79	ACCTCACTCACACCTGGGAA	128	intron 10	4.208
exon 11	198 TTGTAAATTTGTAGTCTCTCA	80	GCCTCTGCTGAACCTTAT	129	intron 11	0.747
exon 12	206 TAGTCAGCCCTTGCCTCTTA	81	CAAAATCATGACCAAGTTGAG	130	intron 12	0.523
exon 13	177 AAGGGGCTTGGTAAGGTA	82	CATGCACATGCACACACATA	131	intron 13	1.787
exon 14	223 GATGGTGGTCCCTCTAGC	83	CGTAGCCGCTGTGAGCTA	132	intron 14	1.747
exon 15	222 CAAGTGAGTCTTGGGATG	84	TGCTTTTATCAGGACTCCA	133	intron 15	1.059
exon 16	205 GCAATTCAATTTCTCCAGG	85	CCCATGCACTGCAGAGATTC	134	intron 16	1.105
exon 17	114 TCAGGAGGAATGGACCTG	86	AAGGCAGGAGACATCGCTT	135	intron 17	1.798
exon 18	172 CTGAAGATTCAAGCGCAGTG	87	GGGATCAGCATGGTTTCTTA	136	intron 18	0.99
exon 19	132 TGCAGACTGAATGGAGCATC	88	GCTTAAGTCCCACTCTCCCTCC	137	intron 19	1.307
exon 20	143 GCCAGGGACACTGTATCT	89	ATTTTCTCCCATGTGTGT	138	intron 20	0.204
exon 21	138 AGTCTCTCTGCCTTCACTCA	90	TCACAGAAGCTTAGCCATGA	139	intron 21	0.706
exon 22	221 CCAGTCTTACCCCTGCTAA	91	AACAGAGCAGGAGATGGTG	140	intron 22	> 0.866 (1.7)
exon 23	73 CACACAAGAGCTTCTTGA	92	TCTGCACCTCTCTCTCTCTG	141	intron 23	0.986
exon 24	203 ACTGGAACAGGTGTGTGT	93	ACTGGGCCAACATAATCA	142	intron 24	1.668
exon 25	49 GGGCTAACATGCCACTCAGTA	94	CTTCCCATCTGCAACAAC	143	intron 25	0.196
exon 26	114 GTTTGTCAGATGGGGAAG	95	GGTAAAGCCATCCAAAGAA	144	intron 26	1.396
exon 27	149 CACCAAGAAGGAGCATGG	96	TCAGTGATCTGGGCATAA	145	intron 27	1.649
exon 28	125 CTGGACTGTAGGGATTGCT	97	CTGAGTCCATTCCTCTGG	146	intron 28	> 0.728 (1.4)
exon 29	99 GCCTGTCACAGAGAAATGCTT	98	CAATGTGGCATGCAATGAT	147	intron 29	> 2.589 (3)
exon 30	190 TTACGGAATGATCTGTGCTC	99	GAAGTACCAAGCCCATCTCT	148	intron 30	1.521
exon 31	95 AGTCAGGTTCCGGTCACAC	100	CATTTCGCCACTGTTTCAG	149	intron 31	> 0.944 (1)
exon 32	33 CCGTCTCTTATCTCAGGTG	101	CCAAGCTTTCTCAATCCA	150	intron 32	> 1.062 (6.5)
exon 33	106 CTTGTACACACTCGCACTGA	102	GATCCGTTTAAACCTGCCAAC	151	intron 33	1.475
exon 34	75 TGTGTCCACAGGTTCCAGA	103	ATGCCCTTGCACACTTAC	152	intron 34	0.522
exon 35	170 TGAGTTTATGGGCATGGT	104	CTCTGCAGCTGTCCCTAC	153	intron 35	1.228
exon 36	178 ATGTTTTCTTGTGCTGA	105	TATCAATCCATGGCCCTGAC	154	intron 36	> 1.898 (2)
exon 37	116 ATCTGCCCTTCTTGTCTGA	106	AGAGTCCCTGCCCCTCTCT	155	intron 37	0.112
exon 38	145 AGGAGCTGCACAGTGGATA	107	AAGGCAGTCAGCAGTGCTAA	156	intron 38	1.545
exon 39	124 TCACCTCCATATTCAGAACTGA	108	GGGGAACATCTGTGCTTAG	157	intron 39	1.087
exon 40	130 TGTATTGGAAGATCGGTGA	109	CCATTGGTGAGTGTTCCTT	158	intron 40	0.265
exon 41	121 CGTTAGCACTGAATCTTTGCTCG	110	AGTCAGAACTGTGGGTT	159	intron 41	> 0.622 (0.9)
exon 42	63 AGTCTGCTTCCACAGTTG	111	ATGCTCCATCTGGCATAA	160	intron 42	0.909
exon 43	107 GGATGTACGTGTAGGGGCA	112	TCATGGATGATTTTATGTGCTC	161	intron 43	2.355
exon 44	142 CAGGAACATTAGGCCAGATTG	113	GGCTGTGGAAAGGCCATAAG	162	intron 44	0.372
exon 45	135 CATGTATGTAGGACACATGA	114	GGCAATCATACAACAGCCT	163	intron 45	> 1.059 (1.3)
exon 46	104 CTGTTTCAAGATGCTTCTGC	115	TGATCGCATTTCTACTTGGAA	164	intron 46	0.483
exon 47	93 CCTAGGAAGCTGGAATGCTG	116	TCCCTTTATTTTAGAGGCCCA	165	intron 47	0.659
exon 48	244 GGGTCCCAAGGGTTCAGTAT	117	GATCAGGAATTCAGACCAA	166	intron 48	0.941
exon 49	295 CTTGACCTAAATTCACATCTGG	118	TGGTTCATATATAGAGTTTCACA	167		> 1.075

Fig. 10

Errors in public sequence (differences between all samples and Genbank entry AJ012376.1):					
Exon/Intron	Nucleotide#	Amino acid change		Sequence difference/context	SEQ ID NO:
2	T150C	no change	Public sequence:	TGTCAGCTGTACTGGAAGTGG	168
	A152G		Correct sequence:	TGTCAGCTGCTGCTGGAAGTGG	169
7	C839T	no change	Public sequence:	AGGAGCTGGCGAAGCCACAA	170
			Correct sequence:	AGGAGCTGGCTGAAGCCACAA	171
33	C4738T	T1495I	Public sequence:	AATGATGCCACCAACAAATG	172
			Correct sequence:	AATGATGCCATCAACAAATG	173
35	C5017T	P1588L	Public sequence:	GAGGTGGCTCCGATGACCACA	174
			Correct sequence:	GAGGTGGCTCTGATGACCACA	175
43	G5995A	R1914K	Public sequence:	TTCTTAAACAGAAATAGTATC	176
			Correct sequence:	TTCTTAAACAAAATAGTATC	177
48	C6577T	P2108L	Public sequence:	GGAAGTGTTCCAAAGAGAAA	178
			Correct sequence:	GGAAGTGTTCTAAAGAGAAA	179
49	G6899A	not applicable	Public sequence:	AGTAAAGAGGGACTAGACTTT	180
			Correct sequence:	AGTAAAGAGGAACAGACTTT	181
Mutations:					SEQ ID NO:
13	A1864G	Q597R	More common:	GCTCACTGCGGATGTGGTG	182
			Less common:	GCTCACTTCCGGATGTGGTG	183
14	delta CTT 2151-3	delta L093	More common:	CCTCATTCCTCTTCTGTGAGCG	184
			Less common:	CCTCATTCCTCTTGTGAGCG	185
15	G2385A	V771M	More common:	GCAGGACTACGTGGCTTCAC	186
			Less common:	GCAGGACTACATGGCTTCAC	187
18	C2799T	R909Stop	More common:	AAAAGTCTACCGAGATGGGAT	188
			Less common:	AAAAGTCTACTGAGATGGGAT	189
18	C2860T	T929I	More common:	GGCCAGATCACCTCTCTCTG	190
			Less common:	GGCCAGATCATCTCTCTCTG	191
22	T3346C	M1091T	More common:	ACACACCAATGGATGAAGCG	192
			Less common:	ACACACCAACGGATGAAGCG	193
Intron 24	(+) G to C splice donor site	Altered transcript length	More common:	CCTGGAAGAACTAAGTTAAGT	194
			Less common:	CCTGGAAGAACTAAGTTAAGT	195
30	T4503C	C1477R	More common:	GCTGCTGTGTGTGCCCCAGG	196
			Less common:	GCTGCTGTGTGTGCCCCAGG	197
35	GG 4956-57 to C	Frameshift at aa1628	More common:	TAGCCATTATGGAACTACTGCT	198
			Less common:	TAGCCATTATCAACTACTGCT	199
41	delta AAGATG 5752-7delta(E.D)1893-1894		More common:	GATGAAGATGAAGATGTGAGGCGGA	200
			Less common:	GATGAAGATG/TGAGGCGGA	201
48	C6504T	R2144Stop	More common:	AATAGTTGTACGAATAGCAGG	202
			Less common:	AATAGTTGTATGAATAGCAGG	203
Promoter Variants:					SEQ ID NO:
Location	Position Relative to Xenon cDNA	Position Relative to SEQ ID NO: 14 Containing Exon 1			
1	G57C	8216	More common:	ACACGCTGGGGTCTGGCTG	204
			Less common:	ACACGCTGGGCTGTGGCTG	205
5'	(-) 4 ins. G	8158	More common:	GACCAAGCAAGGCTCCCTG	206
			Less common:	GACCAAGCAAGGCTTCCTG	207
5'	A (-) 380 G	7780	More common:	CATTTTCTTACAAAAGAGAGGT	208
			Less common:	CATTTTCTTACAAAAGAGAGGT	209
5'	A (-) 479 C	7681	More common:	GAAAAATTAGTATGTAAGGAAG	210
			Less common:	GAAAAATTAGCTGTGTAAGGAAG	211
5'	A (-) 738 G	7422	More common:	CCTCGGCTTGCAGGTTACGCAAT	212
			Less common:	CCTCGGCTTGCAGGTTACGCAAT	213
5'	A (-) 1045 G	7115	More common:	TATGTGCTTACCAAGGAGCTTGT	214
			Less common:	TATGTGCTTACCTGAGGAGCTTGT	215
5'	A (-) 1113 G	7047	More common:	GTGACACCAACGGAGTAGGG	216
			Less common:	GTGACACCAAGCGAGTAGGG	217
5'	(-) 1181 ins. CCCT	5679	More common:	AGTATCCCTTGTTCACGAGAA	218
			Less common:	AGTATCCCTTCCCTGTTCACGAGAA	219

Fig. 11

Polymorphisms: Exon/Intron	Nucleotide#	Amino acid change		Sequence difference/context	SEQ ID NO:
5	G548A	no change	More common: Less common:	CTGGGTTCTGTATCACAAC CTGGGTTCTGTATCACAAC	220 221
5	G730A	R219K	More common: Less common:	GGCCTACCAAGGAGAAACT GGCCTACCAAGGAGAAACT	222 223
Intron 7	G (+) 2383 T	Not applicable	Allele 1: Allele 2:	TTTAAAGGGGGTGAATTAGGA TTTAAAGGGGGTGAATTAGGA	224 225
Intron 7	G (+) 3035 T	Not applicable	Allele 1: Allele 2:	GAAGAAATTTGTTTTTGAAT GAAGAAATTTTGTGTTGAAT	226 227
8	C1010T	no change	More common: Less common:	GCGGGCATCCCGAGGGAGGG GCGGGCATCCCGAGGGAGGG	228 229
9	G1022A	no change	More common: Less common:	AGGGAGGGGGGGCTGAAGATCA AGGGAGGGGGGGCTGAAGATCA	230 231
Intron 9	(-) 42 ins. G	Not applicable	More common: Less common:	AGGAGCCAAAGGCTCATTTG AGGAGCCAAAGGCTCATTTG	232 233
Intron 13	T (+) 24 A	Not applicable	More common: Less common:	AAGCCACTGTTTTTAACCAAT AAGCCACTGTTTTTAACCAAT	234 235
15	A2394C	T774P	More common: Less common:	CGTGGGCTTCACACTCAAGA CGTGGGCTTCACACTCAAGA	236 237
15	G2402C	K776N	More common: Less common:	TCACACTCAAGATCTTCGCTG TCACACTCAAGATCTTCGCTG	238 239
Intron 14	C (+) 16 T	Not applicable	Allele 1: Allele 2:	GCAGCCTCACCGCTCTTCTG GCAGCCTCACCGCTCTTCTG	240 241
17	A2723G	I883M	Allele 1: Allele 2:	AGAAGAGAAATCAGAAAAT AGAAGAGAAATCAGAAAAT	242 243
Intron 17	C (+) 2000 G	Not applicable	Allele 1: Allele 2:	GCGCAGTGCCTGTGTCTCTA GCGCAGTGCCTGTGTCTCTA	244 245
21	T3233G	no change	More common: Less common:	GATCTAAGGTTGTGATTCGG GATCTAAGGTTGTGATTCGG	246 247
Intron 21	G (+) 118 T	Not applicable	Allele 1: Allele 2:	CTCTTCTGTATGACAGAAAGGA CTCTTCTGTATGACAGAAAGGA	248 249
Intron 21	A (+) 563 G	Not applicable	Allele 1: Allele 2:	CATTCTAGGGATCATAGCCA CATTCTAGGGATCATAGCCA	250 251
Intron 24	G (+) 321 T	Not applicable	Allele 1: Allele 2:	AAGTACAGTGGGAGAACAGCG AAGTACAGTGGGAGAACAGCG	252 253
Intron 29	A (-) 624 G	Not applicable	Allele 1: Allele 2:	ATTCTTAAAAATAGAAAATCA ATTCTTAAAAATAGAAAATCA	254 255
Intron 31	T (+) 30 C	Not applicable	More common: Less common:	GGCCCCGCTTATTATTACT GGCCCCGCTTATTATTACT	256 257
Intron 33	A (+) 732 G	Not applicable	Allele 1: Allele 2:	TGAGAGAAATTAATGAACCGG TGAGAGAAATTAATGAACCGG	258 259
Intron 33	C (+) 898 T	Not applicable	Allele 1: Allele 2:	TTTGCTGAAACATCACTGAC TTTGCTGAAACATCACTGAC	260 261
Intron 34	C (+) 234 T	Not applicable	Allele 1: Allele 2:	AACCTCAGTTCCTCATCTGTG AACCTCAGTTCCTCATCTGTG	262 263
34	G4834A	R1587K	More common: Less common:	CTGGACCCAGAAATAATGTC CTGGACCCAGAAATAATGTC	264 265
37	C5266G	S1731C	More common: Less common:	TCCTATGTGTCTCCACCAAT TCCTATGTGTCTCCACCAAT	266 267
Intron 43	T (+) 18 C	Not applicable	More common: Less common:	AAGAAGTGGCTGTATTTTGC AAGAAGTGGCTGTATTTTGC	268 269
Intron 43	A (+) 1665 G	Not applicable	Allele 1: Allele 2:	AACCTGATTTGATTGGTATAGCTG AACCTGATTTGATTGGTATAGCTG	270 271
48	C6521T	no change	More common: Less common:	CAGGGTCAACCGGACCTGA CAGGGTCAACCGGACCTGA	272 273
Intron 10	(+) 14 ins. T	Not applicable	More common: Less common:	TCCTCAGGATGGGGACAG TCCTCAGGATGGGGACAG	284 285
Exon 16	G2547A	V825I	More common: Less common:	CCACTTCGATCTCCATG CCACTTCGATCTCCATG	286 287
Polymorphism in an ABC1 BAC contig: This polymorphism is within approximately 200 kb of the ABC1 gene					SEQ ID NO:
	A or G	not applicable	Allele 1: Allele 2:	TTGGGAGGCTAAGGCAGGAGAA TTGGGAGGCTAAGGCAGGAGAA	274 275

Fig. 11



Genomic contig containing ABC1 exon 1:

Underline = putative promotor element

acctcttatagaatgatagaattcctctggaatgattggataacttcatttcaccccttgacttttaccttggaggattt  
cttacccttttggcttctcaaatgtgactattaaaatgttgccctttaaataaggaacacagtttcaggggggagtag  
cagcccatgacccttctgcaaggccccctaactcaaggtagtttccttggaaactgtggtttatggaatgtttcaggagt  
gtgaggaggtataatttaaggctgtccttagcaaggatacccttaaggatagagggccagtagcatctggaggccagaa  
aagttaaactgaggcagtcagattagcttcaggctcaattaagctgatgggtcagcctgggagaaaattgcaggatgact  
ctcaatatccccctccacccccacagcagccacgatctgtctgtctttaatcatgggtgcagtgaacctgttctttcca  
gggtgtcttggccttcagtaaccttgttaggcttgtccctgaacgtgggtaccgatccaaagacacatgatcagagaggc  
aattagagaacagaccttttccaaagcaagcatgttctgttgggttagaagtctcatgtcctaattataggacct  
gtgcatctctctggagatgaggcacatgagtcatactgtgattcttctgtcttctgtgtcaacatctcatgaataggcaat  
cagagcttggccaccaatgtattttcagttcatatctgatgtagttaaatccacctctgttctgtagtttactggcaa  
gctgttttggatataagacatctagaacactgtaaatataataacatttttattgtctattataacctcaattacgaaaa  
agacatctagaagcaacctcatcaagagagataactgagggccggcatggtagctcacacttgcaatcccattactttgg  
gaggctgaggcaggttagatcacttgagggtcaagagtttgaaaccagcctggccaacatgttgaaacctgtctctatta  
aaaatacaaaaaagtttagctgggcttgggtgggacacctgtaatcccagctactccggaggctgaggcaggagaatca  
cttgaacctgggaggcagaggttgagtgagctgagatcacaccactgcactccaacctgggcaccagagtgagattac  
atctaaaaataaaaaaagtaataaaaaagagagatattgatagctgttgttggaatttcaacttccatctcacttc  
tggttaacttttgggaagttgttgaacaaagtggaaatacacgcacatacacacacacatactctcttgtttgttta  
ggtttaagtgaatagctgtcatataatcactgttttgaagaggagaatttagttgctatctgtacattttgggtatgt  
ggaactatttggatagaactctgagaaatgcattcagaacaacaaacaaatcataggagaaatagctaagtgggaaggg  
ccatataagagttgttgaaaaagttatttcttgagaaaccagctctaattgctaggcaagtcacttgccttggggaggc  
ctcagcttctctgtctataagattgcagcaggggtgtagtggaatgagcttcaacattccaagagattttatctact  
aatacgacagtcacaaatggagcatgactttgtggaagcctctcctcttccaccagaggggccaatttctctgtcccagt  
gagatgttgacacttgtatgatccctgcttggagacttccctcttctggaacctgcccctgggtcaggcatgagggtga  
ctgtcacccttctgataggagcccagcactaaagctcatgtgttggcagtggttcttgcgggaaggaaaaagaccagccag  
cccatttgttactgcacaagcaaacagcttctggtagctgtacagatacatgcacttcttctcactgtgtttccat  
agacagatttagtgctgtagaagagtagaggcagtcacgggaaggagttcctgttttcttcttataattctcatctctc  
ggaaaaatcctcctatcttgtctttttagtgtcatcctctctccccttcttcttcttataattctcatctctc  
tctcctggaaatgtgcatgtcaagttcaaaagggcacaatgttttgggtgaggaagaggtgggagaaacagtgccagggtg  
ctaactagggtcatcatttcccccttcacagccagcttccctgtgaatgtgtgtgtgtgtgtgtgtgtgtgtgtgtgt  
gtgtgtgtgtgtgtatttcttttggcagcatcactgaatctgtctgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgt  
agtaaaagtaattttataatcccagctgtcatttaagccaccttctgtgggtagcatatgggtccactctctcagttca  
ttgtcctaaagatgttcatcagaaaggaataacttccaccccggtactctctgtccccttactctgctttattttct  
tcgtcaatcctaccaccaccactgttgaacaaccactattatttgtctgttcccacccctggtagaatagga  
gccccatgaatgaaggaacttgccttctgtgttccactgaatctctaaggtatggaacacacctggcatgtgatag  
gcactcgataaaatatttgggtgtggctcatgggcaccttgacagagttaaaggctgcagttgtttgtggaatttataagtgg  
taatgaatatttactactattcctcttccaaggcgatcacacaataatcaggctttacactatccagttcttaggtct  
tccaagttatgacttgtgaggtatgttaattatgataatagaaggcagtttatttgggtcagatttattgatgtgta  
ttaccacagtaagacttcccccttacaagaatgatgatgttttgacaaatggatacacatgtgtatctaccactgcca  
tgctccttttcagctctgtcgtccccctccaccatgaccactggtcaccactgcagtgatttctgtccccttcatctcac  
cttttccagaatgtcatataaatggaatcatgcagtagtatttttgtgtctggcttatttttcttagcattaggct  
tttgggattcatccaggttgtcgcagtaacagtagcttattcctttttaggctgagtaagtggtccagttttatttta  
tatatttatttatgaggaggtgtctcactctgtcaccaggtggagtgcggtagcgcgatctcagctcactgcaacct  
ccgctccaggttcaagcaattctcctgctcctgagtagctgggtattacaggcaccacccagccacgccaactaatt  
tttatatttttagtagagatggggtttccacatgttggccaggctgatctcaactcttgacctcaggtgatccgcca  
cctctggctcccaaagtgttaggttacaggcatgagccactgtgcccagccaggttttatttattcaccagttgatg  
gtcttttgcacaactaattgttccagtttttggctattctgtataaggcttctataaatattcacaataacctaggat  
gggatgactgggtcatataatagtactgtataaccttagcagaaactgtcaaaactattttccaaagtggctcttccatt  
ttacaattccacagtgattttagtcccagtgctccatacacatgctagcacttttaattttaatttagtgggtatgt  
aatgatattctatttgggttttaatttgcatttctctgcagctaattgatgagtggttctgtctatttgggaagggttta  
attagcagtgctgttatttctgtagatattaataacttcaaaatcatcagtggtcatttgcagttaaaatttccctaaaa  
aattggccaaagggttccagcagtcacttctgcatgagcccaactgtatgaaacaaggctgaggtgtggagattgtcac  
atattggcaaggagtgatccacttgggtgactgatgagaccagagagcgtacgcctcgggcttgagggtgaggacggg  
cggaagtcgactgcagtgccctgtggccttgggaggctgccagtccttagctaaagctggcagttatgggaaacag



cttgttttatttctgcagagccttaagccattcacttcccagatgggccaatgctttgagtaatctggagatca  
 tctttaatgccaggtgaatgggaactcttccacagagggatgtgagggctgttagcagagtgaaactccctgaaactca  
 gacgtcagctcttctgtctctatctctgaacacccttcttagagatcccatctctaggatgcatttctctgtagtta  
 gtttctaagtccttctgttctgttctgcctttatttttttcttggttctaagccagtatccccacttggctgtctt  
 aatgtagcttaacatgtctgtaataaaatgatcatcttctgagattcaaagggctataagggacttggagagaatt  
 tcattcagtttctcctcaaaactagaataatgcttgcactgtctgtaaaagaacaaaagtgtcaaagcatcctttgttca  
 cttaaatttcttttttattatagtgttacttaaataattaggaagttaaaagttaggtataaaacttcttataggctgttat  
 tatacaactatatgaccatacatatttacaataaagtgcagccaaaattgcaaatcaataccattcaaattaatac  
 cttaaagtgtggtgagggcagctgttgttcaactgaaaccaaattataagttgcatggcagtaaatgctatcatgctgac  
 attttgagtttggccagctctatattatcatgtgctaattgattgaattctccacccttttctacttgtatgacctaa  
 ttgatggcacctgttccatcctcatgagtttgctacaattatactgggtgccaacacaatcataaacacaaatataaac  
 ttgggctttgaaatcttgtgcccagaacttggctttaaagtaagcatttaaaaaatccatatgtgtttattagactttgt  
 ttagatgactgttgaaatgaaaaaaaagtgtttaaatacctcttagagaacttaaatataatccctcagcaatatgtat  
 acagatcttctttagagaaaaactgattgtgttcagcctctcatgttacaaatggggaacctgaattctgaggtctcta  
 gtgagagaacagggactggaatctgtggatcctatctgttttaataataattgttaaagtataatagataatattatatt  
 aaaaagagagnnnnnnnacacttagaatgagcttccatgtgtgagggcactaactgattaggcattattaactagatttat  
 tcttttaaggccccgcgatgtactgttatttccacatgtttagctggggaacgtgctactcagagaggttaagtaac  
 ttgtctgaggtccacaccactaacaaggagcacaggtagggttcaaataccagataatctgacttggagctggcactct  
 aactcaatgtgcctaatacgcttttcagtggtgtcattattttgcctatttctccatctgagaatattgaagtttctgact  
 ccttcttgccttttctcctgcctcccgtgggttatccccaggtcttgggtgttccagtcctctatgtccgtccttactct  
 tattcctttgctacagtgtgatccagggctcctgcccttcttatcctggttagagggggccacttgcctgggaaattgtc  
 tccgccatgggttatccatgttgtgtgtccattagttagtgagtggggaagaatcatatcatgttggcaatgaaagggggg  
 ctatggctctggggtagtctagtctgaactcttatttt

[illegible]

ccaggcaattaacgtgggctattggacttttccaaagatgctgtctttgggacatcacacatgctttggatcagaa  
aacctaggcttctaatttgttgataaggcatgaactcaggagactgtttcagtcctagtgaatggtgataattgtaatt  
ataacagtagacaacatctcttttacacattttaaatcatgaaaatagaataaccttactgataatttagaaagtggg  
attaaaagcacatttaagataatgccttaacacctagtctttccatgatgatgtcttaatcacacattgcaaatca  
tggaacacagaatttt



tgtcttctctgcatcaggtcaactctctcacctctgtcactgccccatcagatcaaatgtctgcaggtctttctccct  
gagtgtgagctccctgagcaaagcaggatgctgccccctccctttgtattccttgctccttgcttcagtgcctgtacata  
agtatgggcataataagtgtcccccaaagagacattgaggattcttcaaagcacaggaccgtgatgtgagttaggacg  
gagtaaggacgatgggatgtggctcatgacaatcctgaggaagctgcagctgcggcacgcagggccacactgtcatgttc  
atggaccctagactggctttgtagcctccatgggccccctccatacac

Genomic contig containing ABC1 exon 4:

tcatgactgccattggtataaagatgaatataatccagaccagattcatgattattcatacatTTTTtagtgatttaactt  
 ttaattctgctTTTAAATAAATTAAAACATTCTAATATGCCCTTAAGAGTATCCCAGCCCAGGCCACTGAGCCTACTGT  
 ggttcatggataagTTTgcccctgggggcatgtgtgtgcatgcatgtgtgtgcacatgcatgatgagccgggcttgaag  
 ggtggttaagatttgggtgtgttagaccaatggagaaaggcatttggggcagtgatgatgggtgggggagggaaacatggtga  
 tgaatggagctgggtgtggggagccatgggagtgggttagggccagcctgtggaggacctgggagccaggctgagttcta  
 tgcacttggcagtcacttctgtaaagcagcagaggcagttggcctagctaaagcctttcgcttttcttgccacctttac  
 agTGTGGCTCGCCTGTTCTCAGATGCTCGGAGGCTTCTTTTATACAGCCAGAAAGACACCAGCATGAAGGACATGCGCAA  
 AGTTCTGAGAACATTACAGCAGATCAAGAAATCCAGCTCAAgtaagtaaaaaccttctctgcatccgtttataattggaa  
 attgacctgcaccagggaaagagagtagcccaggtgtctggggcttgttcccattagatcttcccccaaggggtttttctc  
 cttggtggctggcctgtggggccctctccaggaggcattgggtgaagaaactagggcagctgggttgccacagacagtgat  
 gtactaatcttctctgggaagacagaagaaaaagtccccaggggaagaatactacagacttggccttagggacagctagggg  
 tgcagattgctgccaactgcattttttctgaagttggccatatgggtgagtgaaatggatttatagacagagtatttctg  
 tgcataataagagcaattacagttgtaagttgatatggataagtgaagttaagcacttctttctaaaaagagaatgcaat  
 tcattttccccctaatcatttcaattagctctgatgggcatttgaacttgttgtcttaaaaagtgaaatctttacctctga  
 tctggtaagtatccaggcaatttcttgtgtgccaccaggaggatctggggagtgggcattttctgactgaggcattgg  
 ctgccatagcatcagagcagccttccaggcagtggcctggcaaggggacagaggctgggtgggagcagctggctgagtga  
 gccagtaatggcatgt



Genomic contig containing ABC1 exon 5:

agctctccagctgattctgatgcataacttaagtttgagaaccattgcttgttttgcattaaacaggagattagtctctgc  
agcttgtgggaataaagcttttaaatctctccaatttttagctctgtgaaaaggcagtgaggagacaggaatgaacggacta  
ctgccacaaagctcaggtgggtgggtgagatcatttagaagagaaaagaccgggcatgggtggctcacgcctgtactgtca  
gcacttttggcaggccaaggcaggttggatcacaaggctcaggagtttgagaccagcctgcctatcatggtgaaaccctgtc  
tgtactaaagataaaaaaaaaaaaaatttgccagtcaggtgatgcataacctgtaatcccagctactcgggaggctgagggc  
aggagaatctcttgaacccgggaggcggggttgccagtgagctgagattccaccattgcactccaacctagggtgacaggg  
tgagactccgtctcaaaaataaaaaaaaaaaaaagaaaaggaaaggctgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgt  
gt  
atattcatgctctctctgatatggcgatgctccctatctcattcctgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgt  
atattatgataacgtttctccactgtcccattgtgcccacttt  
acactattttctcaatagACTTGAAGCTTCAAGATTTCCCTGGTGGACAATGAAACCTTCTCTGGGTTCTCTGTATCACAACC  
TCTCTCTCCCAAAGTCTACTGTGGACAAGATGCTGAGGGCTGATGTCATTCTCCACAAGgtaagctgatgcctccagctt  
cctcagtaggcctgatggcaattacgttgtgcagctactggaaagaaatgaataaaacccttgtccttgtaatgggtgggtga  
aggggagggaggttagttgaatacaacttcacttaatttttacttccctatttcaggcaggaattgccaaacctccaggag  
tggaaatgcaacctggcgatcatgggacagctgggttaaaataaaaattgatttctggccttatcacttggcatttgtgatga  
tttctctctacaagggatacattttaagttgagttaaacttaaaaaatattcacagttctgaggcaataaccgtgggttaa  
gggttattgatctggaggagctctgtctaaaaaattgaggacaggagactttagacaagggtgtatttggagacttttaa  
gaattttataaaaataagggctggacgcagtggtcactgagttgagaactgttgcttgctttgcattaaataggagatcagt  
ccctgcagcttgtgggaataaggctttaaatctctccaatttttagctctgtgagatggcactggggaaacagaaatgaac  
ggactagtgtcacaaagctcaggtgggtggatggacgagatcacttcaaaggctctgtaatcccacgtctataatcccagcact  
ttgggaggccaaggcgggaaaaatcacttgagggtcaggagttcgagaccatcctggccaacaatgcaaagcctgtctctac  
taaaaaatagaaaattagctcagcgtgggtggcatgctcctgtagtcccagctactcgtgaggctgagacaggagaatcgt  
ttgaacctgggaggcggaggttgccagtgagccaatatcacgccattgcactccagcctgggtgacagagtgtgactccat  
ctcaaaaaaaaaaaaaaaaaaagaattttataaaatcaggaaataatattagtgtttatgttgaaattttaactttagaat  
catagaaaacttctctggcatcattattagacagctcttgtgcagtggttagcaccagacccagcttgcagtggttattg  
attttctagagacactttttgagcttattctctggcagaaaggggaactgcttccctccctatctcgtgtctgcatacta  
gcttgtctttacaagaagcagaagtagtggaatgtttattcttgaaaataagcttttttgcttcacatgatctagaattt  
ttaaattagaaaaatgtgcttactgctg

Genomic contig containing ABC1 exon 6:

agtaaaatggagaattccaaattctgaaattgtagaacatagttctgtgtcttagttaaatatcgacacttacagataa  
atagcataaatgcttttctccccatatttcagcccagtcctacttaaagacaacataaattgcaaaatagtgaggatgttg  
ttcatctaataaaaagtggttccaggaattcagactctggattcctgtttgcaaatcatgtgtccactcttaagaaaac  
gagttggactntggatttttctttgcaagagggacaagagtgtgggagatactgagttaatgcaacttgcagggtttaag  
tgtcctgtcattgtgccttgtgctttgatacattctgagtttcagtaaagagacctgatgcattggactgttgcaatgga  
acctgttttaagatcttcaaagctgtattgatatgaagttctccaaaagacttcaaggacccagcttccaatcttcataa  
tcctcttgtgcttgtctctctttgcatgaaatgcttcagGTATTTTGGCAAGGCTACCAGTTACATTTGACAAGTCTGT  
GCAATGGATCAAAATCAGAAGAGATGATTCAACTTGGTGACCAAGAAGTTTCTGAGCTTTGTGGCCTACCAAGGGAGAAA  
CTGGCTGCAGCAGAGCGAGTACTTCGTTCCAACATGGACATCCTGAAGCCAATCCTGgtgagtagacttgctcactggag  
aaacttcaagcactaatgctttcggaaatgtgaggcttttcttggacagcatgactttgtttttagaaaaagtacggctg  
gctgggagtttgtgatataatttagttcagtggtattctaagtgttcttagtggtcttccagacttttgggccatctccc  
aaagggatgaatgggaagaataagctgggtgtggctgagtttaagccaaaagtttttgtgcttgtttcaatcagagaaga  
cctgctttttcatgtttttactattataataactaagcaagagctcatttgaaaacagagttcttcatatttaaaaaaaaaa  
aagcttgaaccattgatgggaagatggatatctatttatgtttaaaacccatcataaagatgacattgtgggctgtc  
acagttggaaggccctggaattagatgagaccacactatttagcttacttagtaataacattg

Genomic exon containing ABC1 exon 7 and 8:

ccgtttggcaaatgctcagtaaaaagaaaagggttagaaggggagaaaaggcattttatcccaagccttcaggaatcaggat  
gaggatgtcttcaccttgtggtggggagtaattatacaattagagacagcacattggagtggtgctgatatgctgtgtga  
tgatagctctagctctctgcttagcagaggaaggacatttcaatagaagaaaaagtttaagaccttgccgagaaaacagag  
aaaggatgttctgtctttttaagaagttgaaaaccctgtttgcagacaaaagccctccagttttggcagtaaaccttcatg  
caagggaaagaaaaaggcaggggatgacattgttgacaattgtgaggaattaccatgtgccaggcactgtgagggggcctt  
tgtacatatcctctagtttttagtgcttataaaaaactctgtgatgtgtgcacagcattttaaaccttgtgtcatagtcgag  
aaaatggaaggatggggaatttgagtcatttgcacagggttctatagctaccccaggttcccatgactggagaattgggg  
cacagggtggcgggggagagtgagtgacaagaatcctaacaatcttatttccattgagtccttataaaaaagaagtggatta  
actaccacgtttttaagtttttcttaaatttaggttatgtggatctggcggttcttgttttgcctgggttgttttgtt  
tttgcctatgctgtcttgaacatctgtcatctttaggcctaacggtaaacacaaaaaacctttacctcctatagctttca  
attaagatctctcagtttgtgtttgtaatagttttccaggcaagttctccctaggttcggcttctagtggttaaccttt  
agttataaagtgaacccaaagagagaaaagtagaaaacaaaacacctcacctgttttgcctcatgaattactctctatggaa  
ggaacaatcatgaacacctctgcgtatcacagaggcctatctgagtcgtgacgtttaagggagaccgcgtaggtccctttg  
aggactgtgaatgtgggagtcctgggactctgggtgaagaacccttccagaagagatgaatgagctggacaagtcttttc  
atagaacctttaggcaggttttcttagaaatgcacattgaggattatgcttggatattgtgatgacagaaatgatactca  
atcccttctgcatttggaaattctcttgaagaaaacatcccaggcagctatttctcagagatagtgagtcagccagccact  
tctagacattttctgtgtagtcctacattataatttcacagcagtcctctgatagacaaaatgtcaaaaatagcccaacctt  
ctctaaacttcagagatgtctgatattgaataaaaacaatgctcatagaaaacatcaagaaaggtggattttccctg  
gatacttttttctgcttgacaaaataacagtgaaagaaactgatctcacgtctgttaaattattgttcttttttcttttagctta  
aaccacaacttgaggctcctcagctatagcaattctgacttcacagtcctgttaaattattgttcttttttcttttagctta  
tgctttctgcccataatttatcttttccctgttctaataaatttgaactaaaactcgatgtaaaaataagtgttctacattcaattt  
cagcaattaaatatgaattgggtacatatagaatttgaactaaaactcgatgtaaaaataagtgttctacattcaattt  
ccagtggttagaaacagtgctgacttgaacagagtgacagaattccatctttccctatttttgacagctttaaacctttata  
ttttcttctttctgtgagcgtcttaacttgtttctcaaagccattcccgtattacccatcttgcagacgcagacag  
atttgggaatttgcgggtcagagttgtattggacacatccccccagcccacatgagatccttttaattctattgcatattaa  
ctagtttttaagtacaattatcctacttcattttaaaccattaatcaaagaatgagttgaaaatgaacaaaatgcaaaact  
tacagttagaataaattgtagtgcttttagtttgggttaggagtcgggttcttgtttgttaaactcaagattgtgaacag  
ttttaattcacttgtttatttccaatagagatttcaggtttacatttgaattcagaaaacaaagttttctttctcattaca  
**GAGAACACTAACTCTACATCTCCCTTCCCGAGCAAGGAGCTGGCCGAAGCCACAAAAACATTGCTGCATAGTCTTGGGA**  
**CTCTGGCCAGGAG**gtaagtgtgtctttccagttaccaggaagcggatcatccactgtatcagtttttcttccctgagtc  
ctggcaagaggtccttttgagttgaatatcacatgggatgtaatatcaattttcaaagtataagtgatgtaaacataat  
gttttgatttcttatttttagaaatgaagaaaccttaaaactcatagatgtctcagagctaattgggttagtggttaacagc  
tggtatctagtttagaaccttctccatttttttcttttggccctaggtaatcacaatttgtaaaagaggagaattatct  
ctgccactgcccattgactgcttttgtctgaccagcaatttctccatattgtcttctcagtagcaaggccaatcatttta  
ccaacacacatgcttgctaactaacaggaataacgtggtacccttaattcagcccttcccttgaaagcatctggcttct  
gaggttcaactatgggaatatgggtctcttaataagacatttaagttgagtttgccttttaggtccacatgttgacaaatgta  
tcagagtaattctctgtcctaggatcagagggcctgtaggcacttgcaaaagcagtttagctctgactcccagccagtgac  
actccacctttctgactcccagccttgtctcaaattaggtctggaagcgaggaactgtctgggtgtccccagcataggaa  
gctgagccagggggcagtgctcacaacaatacagactttaacgtgtaggatattggaaaaataaatttgggggaaat  
tgtctcagacttggtccaccttatttttagctgtcttctaataccgttttttcttttttgggtgcttgtatctaacctac  
ccattttttgggtgcttgcatcattttttcaaatatcaaaaacgaactttatgttttcaacaatgaaagtattgcatgtt  
cattgtggaaaatgctgaagacttggaataatcaaaaaatgctgagatcaaacactattgatacgttagtgattttcttcc  
tgtcctgttctactttcttcttgaattctgtcacgtgtttctgactgatgaggtctgacttttgggttccctttcca  
gaggagaagccttcttccagcttggcatttgttaccttgggtatgaaggctggtaacctttttactaggttagagaagct  
ggaccaactgggggttcttccaggggggagaatgagaaagagaaaactgttttgcaagtcgtagctatttctctagggccct  
gttagctgacattgacatgccttgcattgtctctgcagatccctcgcagccctctgtccctgttcatttctggccttag  
agaaagcaaaagcaggggtctgtaacaggggaggtgctctaaactcaggggttgggttacagctgttttcaactacatcac  
tgccctgggttttttttttttttctgtgcatataaaaaaaaatttggaaagcaggtgatgttcccatgtgtgagtggtgga  
aactctccaagtgaacaataacgtttttcttggcagctgtttcttgtgacctgctgtctcctgggtccaggacaagcaag  
gaccatctgctcttttcaatagaacacctccagatcccttggatcaaaaagttactcattgtctgacttgctatttctgtg  
agataaatgggagaagatcaataaatgcacttgtttgtccagtcagcgtgtggaaagttgataattttgaccaaaagcaca  
accctgaaaggaaaagaaaaaggagtgaaatgtcttctgagaagctgcctaggttcagacagtgctcaccatttccctgt  
atgctccacatgacaaacctgagtggtgtctcatcatgtccattttgcagatggcaccaggtcagaaaggttaggcaac  
ttttccagtcacccaatgagtttaattgacaaaactgggattcaaaccagaaactgttgattccaaagcctgtgtgtgtg  
cctgcttctgtgaaaaactccagtagcagactggaatagaaaggagaaccttccaagaaagaaaatacgcactagcagaacc



[illegible]

[illegible]

agactccaattcggtagaaccagagcttcatcttctctgtcgaaagctgtgacaggagttgcaaatgcctctccttttgc  
 tgagtttgcagctgctgttttccggcagcacatctgtgcaggcctctgcctcgccctctcgatctgctgattgagca  
 cgggattgatctgtccttctcttctgtgttgacccatgtgaggaaccaactggcaagggaacaagaaatggaaataggcc  
 tcctttgcatcatgacctgtacatcctgcaattggaaaagattgtacttttagttggtttaaccagcagcattattttct  
 aaactaagcagtaagaaggaattaggttttatgtgggatcaacagactgggtctcaaaagaggaaggtgatagaacacag  
 tggggaggggaggtgacactagaaacagagggcctatgctttcattctggctttgctacttaataagctgtgtgacccaat  
 cttagagacttaacctctctgaacttccattttctcatgtataaaatgggaaatattaaaggatactcactgggctggtg  
 gcttgtcctgtaatcccagcacttggggaggttgaggtgggaggatcacttgagcccaggtgttcaagaccagcccagg  
 caacatggcaagactctgtctctatgaaaaaattaaaaattagccaggtgtggtggtgtgcacctgtagtcttagctact  
 tggtagctgagatgggaggatcacttgggcttgggaggtcaaggctgcggtgagctgtgattccatcactgcactccag  
 cccgggaggcagagcgagacactgaatccaaacgacaacaacaaaaggcaaaaaataaaagtgcctctttatgga  
 gttgtgtaaggtgaagcatatacactattcaacatagtaactatataaaggaagattgttgttgttactgtagttaata  
 ccattaaagtgagatgttctgtatagtggaaagcacatggactctgaattcagactggtctgactttgagtctcagctcca  
 catctagtaatactatgaccaagccctgggttaaaatcatgttttttttcttcagcctcagctctctcacatataaaata  
 gggacactgtcatttacctcagttttctgtgaggataaaaacaacgacagtgtatatgcaagtattttgtaaattttgtag  
 tgctcctcaagatttagttggtgtttactacttgtactttctcactggaaatggcagATGCTGTTGGACAGCAGGGACAAT  
 GACCACTTTTGGGAACAGCAGTTGGATGGCTTAGATTGGACAGCCCAAGACATCGTGGCGTTTTTGGCCAAGCACCCAGA  
 GGATGTCCAGTCCAGTAATGGTTCTGTGTACACCTGGAGAGAAGCTTTCAACGAGACTAACCAGGCAATCCGGACCATAT  
 CTCGCTTCATGGAGgtgaatctgttgcctgggatcatttagaaaagacttaacggcttctttctctgagacgttacaataa  
 ggttcaggcaggaggcaagtttagaaataatgtatagtctcatttacaaaactatccctcaagcctaacacaggatttga  
 taacaaaaggcacttaataaatgttagttgagtggtgaatgagtaataaaactctagcttttagtaaatctacttagct  
 tattctatataggctcaagagaatatttctacccattttctcttaggttttctctatctcagtgactaatggttagcaaac  
 attcccttaaaaaggcattatttgtgaaacttayctaaaatcgaattcgggtccaattaaatttttgaattttatatta  
 aaaattatattagtagggatgggtaagaggtgttttgggtcgtggttgggttagttgctatgactcagaattgctaaga  
 aaacagaaaagtaagataagatcattgttttaacctcttttctccacaaaatcaataaataacatccctaaattact  
 cttagaattttctttaaattgcagtgaaaaacaaaatccttctcattcttgggtgaaggttggaactacgttagagagg  
 attagagagagaggatgagcaatcgtgtagtcagcccttgccctcctagtgtaggatttgtctcagccactgcttgttgc  
 ctggctgccaacgttctcatgaaggctgttctctatcagTGTGTCAACCTGAACAAGCTAGAACCATAGCAACAGAAG  
 TCTGGCTCATCAACAAGTCCATGGAGCTGCTGGATGAGAGGAAGTTCTGGGCTGGTATTGTGTTCACTGGAATTACTCCM  
 RGCAGCATTGAGCTGCCCATCATGTCAAGTACAAGATCCGAATGGACATTGACAATGTGGAGAGGACAAATAAAATCAA  
 GGATGGgttaagtggaaatcccatcacaccagcctggtcttggggaggtccagagcacctattatattaggacaagaggtac  
 tttattttaactaaaaatttggtagaaatttcaacaacaacaaaaaactcaacttgggtgtcatgattttgggtgaaattg  
 gtacatgacttgcaggaggtttttcataggtcataaaataacagtatcttttgatttagcatttctactcaagggaatt  
 aattccaggaattttgggtggcaggcacctgtaatcccagctactcgggaggctgaggcaggagaattgcttgaaccagg  
 aggcagaggttgcagtgagctaagatcgcatcattgcactccgcctgggcaataagagtgaaactccatctcaaaaaa  
 aaaaaagatacaaaaatagaaaaaggggcttggtaagggtagtaggggtttgggcaattttttttttttttttttt  
 attgtatgggttctaaaggaatggttgattacctgtgggttgggttttagGTACTGGGACCCTGGTCTCGAGCTGACCCCT  
 TTGAGGACATGCGGTACGTCTGGGGGGGCTTCGCCTACTTGCAGGATGTGGTGGAGCAGGCAATCATCAGGGTGCTGACG  
 GGCACCGAGAAGAAAACCTGGTGTCTATATGCAACAGATGCCCTATCCCTGTTACGTTGATGACATgtaagttacctgcaa  
 gccactgtttttaaccagtttatactgtgccagatgggggtgtatataatgtgtgtgcatgtgcatgtgtgtaatgat  
 ctggaaataagatgccagatgtaagttgtcaacagttgcagccacatgacagacatagatatatgtgcacacactagtaa  
 acctctttccttctcatccatgggtgccacttttatcttttttttttttttttttttttttttttttttttttttt  
 cgccaggctggagtgagtggtcgtatctcggtcactgcaaccttgcctcccggttcaagctattctcctgcctca  
 gcctccacagtagctgggactacaggtcatgctgccacgcccggctgactttttgtatttttagtagagacgaggtttca  
 ccattgttaccaggctagacttcaactcctgagctcaggcaatccaccctcctggcctcccaagtgtctgggattacag  
 gtgtgagccactgcacccagcccaccactttaattttttacactctacccttttggtaaaaatttgcataatctgcaagc  
 ttaaaatgtgtcatgacaaacacatgcaagcacatactcacacatagatgcagaaacagcgtctaaacttataaaagcac  
 agtttatgtaaatgtgtgcacttcttctccctaggtggtaaacacatttcaaaacaacccaaataaaactgaacaaagc  
 ttcttctctcttagacttttttagaaaaatcttctcagtgctgagtcactaagctgccaagtctcattgtgggaactatgcct  
 ttggatgtaaatgatttcttctaaagacaatggcgagggtgtagtatttgagacatctgaaatatgtaaatgtttcttcca  
 gattctggaaaattctcttattctctgtggttgggtgggtgggtgggtgtgtgtgtgtgtgtgtgtgtgtgtgtgtgt  
 gtgtgtagggatcaggatgcgggaggagctgggttctgcttgtattgggttctctgttttgcattgaatagtgtgttctt  
 tgtatggctatctatagcttttcaaggtcaccagaaattatcctgtttttcaccttctaaacaattagctggaattttt  
 aaaggaagacttttacaagacccttaagctaaggttactctagaaaggatgtcttaagacagggcacaggaggttcaga  
 ggcattaaagagctggtgcctgttgcctgtgtgtagttagttagtgcctacatggtaagctttgacgtgaacctcaagttcag  
 ggtccaaaatctgtgtgccttttactttgcacatctgcattttctattctagcttggaaatctgaaacattgacaagagc  
 tgctgaaatgtatgtctgtggtgtgattagagttacgataagcaagtaagtagtagatgaccttggagatgttgaact

tttgtgagagaatgagttgttttttgggttttttagtactttaacataaattaccttttagtttaagtatcgctcac  
 agttacctagttactgaagcaagcccccaagaaatttgggttggcaacactttgtagcctcggttttctctacatt  
 gcattgctcgtgaagcattggatcatacgtaacattcagagcttagagggcctgtccttctgtggcccagatgtggtgct  
 ccccttagcattgaggctcagaggccttggcccatcacctggctcacgtgtgtcttttcttccccttgtccttcctt  
 ggggcctccagCTTTCTGCGGTGATGAGCCGGTCAATGCCCTCTTCATGACGCTGGCCTGGATTACTCAGTGGCTGT  
 GATCATCAAGGGCATCGTGTATGAGAAGGAGGCACGGCTGAAAGAGACCATGCGGATCATGGGCCTGGACAACAGCATCC  
 TCTGGTTTAGCTGGTTTCATTAGTAGCCTCATTCCTCTTCTTGTGAGCGCTGGCCTGCTAGTGGTTCATCCTGAAGgttaagg  
 cagcctcactcgctcttccctgccaggaaactccgaaatagctcaacacgggctaaggaggagaagaagaaaaaaatc  
 caagcctctgtagagaaggggtcatacctgtcatttctgcaatttcatccatttatagttggggaaagtgaggccag  
 agagggcagctgacttggccaaggtcaacccagccgggtagcagctaagttaggatgagagtgaggggttcatgctttcca  
 gataaccacatgctcaactgtgccatgctgtctcattggtagtgggttcatggcagcatctgaaagctatttattttctta  
 gatataattgggtggcgattcttccctaagtttctaagaacaataatcagaaggatataatattgttgcaggttagactgtct  
 ggaagcagagcgtgaaatagagtttgatgtatgggtatttatgagggctcaatacctatggaagagatatggaagatgca  
 ggattgggcagagggaggagttgaactgtgatatagggccaacccccgtggggcactctagagaatatgcagcttgttgga  
 gttgttcttcatcgagctgaaacatccagcccttgtgtctcccccaaggcctccctcctgacaccacctacctcagccct  
 ctcaatcaatcactggatgtgggtgcccgtgggaaggtcgtgccccagggcctacatggctctctgctgtgtgacaaac  
 ccagagttgctgatgctgaggccgtctactgacagctgggcaacaaggcttccctgaatggggactctgggcagctgca  
 ttttgtgtctgaaccatacatataatatttatatccgaattttcttctctgcaagcatttcatataaagacacatcag  
 gtaaaaaataaatgtttttgaagcaaaaggagtacaaagagataagaactaactaatttaatactagttaccatctgttac  
 aaatagttcctactgattgccaaggactgtttaaacacatcacatgggcttcttcttctatcctactaacccttttaac  
 agacaaggaaatgaggctcaggaagggtcaaggactttattgaggttccacagtaggatacagttcttgctaaaagcaacc  
 cctccctcatgctctgttatctaactgcaaggggaagggtcagtgccagaggtagtgggtcccatgggtgggtgcataagagc  
 tgctctgagacaactgcatgctgggtgggtcctgcagacatgtacccatcagccggagataggctcaaaatatccacaaga  
 gtttggtgatgttggggaatgcagaatccatgggtgatcaagaggggaaagtcaagttgcctggccattttccttggtttt  
 agacagaaaagttacgtgggatattatctcccacagctcttctgtgggtgccaccagtcagctcttatataaggagaaa  
 ccagttgaaattacctattgaagaaacaaagagcaaacctcgccactgaaatgcgtagaaagccctggactctgttgtat  
 tcataactctgccattattttctgctgtagtttgggttaagtcaacttatcttcttaggatggtaagtatcagttgcctc  
 atcagaaagatgaacagcattacgctctgcatgtgtcttaacatgagtaggaataaaccctgtctttttctgtagatc  
 atacaagtgagtgcttgggattgttgaggcagcacatttgatgtgtcttctcctcccagTTAGGAAACCTGCTGCCCTA  
 CAGTGTATCCAGCGCTGGTGGTTTGTCTTCTGTCCGTGTTTGTCTGTGGTGACAATCCTGCAGTGCTTCTGTATTAGCACAC  
 TCTTCTCCAGAGCCAACCTGGCAGCAGCCTGTGGGGGCATCATCTACTTCACGCTGTACCTGCCCTACGTCCTGTGTGTG  
 GCATGGCAGGACTACGTGGGCTTCACACTCAAGATCTTCGCTgtgagtacctctggcctttcttcagtggtgtaggcat  
 ttgaccttcccttggagtcctgaataaaagcagcaagttgagaacagaagatgattgtcttttccaatgggacatgaac  
 cttagctctagattctaagctctttaagggttaagggaagcattgtgttttattaaattgtttacctttagctcttctcag  
 tgaatcctgggtgaattgaattgaattgaatttttccgagagccagactgcatcttgaactgggctggggataaatggca  
 ttgaggaatggcttcaggcaacagatgccatctctgccccttatctcccagctctgttggtatgttaagctcatgacaa  
 accaaggccacaaatagaactgaaaactcttgatgtcagagatgacctctctgtcttcttctgtgtccagtatgggtgtt  
 tgcttgagtaattgtttctgaactaagcacaactgaggagcaggtgcctcatcccacaaatcctgacttggacacttcc  
 tccctcgtacagagcagggggatcttggagagtggtgtgagccctacaagtgcaagttgtcagatgtccccaggtca  
 ctatcaggaaagctaagagtgactcataggatgctcctgttgccctcagctctgggctcataggcatcagcagccccaaa  
 caggcactctgatcctgagccatccttggctgagcaggagcctcagaagactgtgggtatgcgcatgtgtgtggggga  
 acaggattgtgagccttggggcatcttggaaacataaaagttttaaagttttatgcttactgtatatgcatttctga  
 aatgtttgtatataatgagtggttacaaatggaatcattttatatgttacttggtagccaccactccctaaagggactc  
 tataggtaaaatactacttctgcaccttatgattgatccattttgcaaattcaaatttctccaggtataatttacactaga  
 agagatagaaaaatgagactgaccaggaaatggataggtgactttgcctgtttctcacagAGCCTGCTGTCTCCTGTGGC  
 TTTTGGGTTTGGCTGTGAGTACTTTGCCCTTTTTGAGGAGCAGGGCATTGGAGTGCACTGGGACAACCTGTTTGGAGAGTC  
 CTGTGGAGGAAGATGGCTTCAATCTCACCACTTCGGTCTCCATGATGCTGTTTGGACACCTTCTCTATGGGGTGATGACC  
 TGGTACATTGAGGCTGTCTTTCCAGgtacactgcttgggcatctgttggaaaatatgacttctagctgatgtccttct  
 tttgtgctagaatctctgagtgcatgggcttccctgggaagtggttgggctatagatctatagtaaacagatagtcca  
 aggacaggcagctgatgctgaaagtacaattgtcactactgtacagcacttgttcttgaaaactgtgtgccaggcagc  
 atgcaaaatgttttatacacattgttcatttaatttccacaaggctactctgaagtagttactataataaccagcaatt  
 ttcaaatgagagaactgtgactcaaagacgttaagtaaccagcttgggtcacacaactgttaaatgttggtacgtggagg  
 tgaatccacttcgggttacactgggtcaataagcccaggcgaatcctccaatgctcacccaattctgtatttctgtgtcc  
 tcagagggggtacaactaggagaggttctgttctctgagtacaggttggttaataattaaatataactagctctaaggcctg  
 cctgtgatttaattagcattcaataaaaaattcatgttgaaattttctttagtacttcttcttaataataacatcttct  
 tgaccaagttccaagaggaacctgcgttgacagtttcatatgagatcaaattctgagagagcaagatttaaccctttt  
 gggtcaccttctgatcctcccctaaggaggtatacatgaaatatttattactcctgctgaacttcttctcattgaatatg



caat t t t t g c a g c a t g c a g a t t c t g g a t t t a a a t t c t g a g t c t t a a c t t a c t g g c t g a g g g a c c t t g g a t a g g t c c t t a t  
c c c t c a g t t t c c t c a t c t c t a a a a t g g g g a t g g c a c c t g c c c g t g g g t t g t t g g a a g g a c t t a c a g a g g t g c a g a a t g t  
a c g t t g t a c a t a g c a g g t t t c a g c a a t g t t a g t c c c t c t t c c c c a c a t c c a t t c a a a t c t g t t c c t t c t c c a a a g g a  
t g t g t c a a g g a g g a a a t g g a c c t g g c t g g g a a c c c t c a g a a t a c t g g g a t g a t g c t g a g c t t g g c t a c a c t g t g c t t  
t g c t t t c a g G C C A G T A C G G A A T T C C C A G G C C T G G T A T T T T C C T T G C A C C A A G T C C T A C T G G T T T G G C G A G G A A G T G A T  
G A G A A G A G C C A C C C T G G T T C C A A C C A G A A G A A T G T C A G A A A g t a a g t g c t g t t g a c c t c c t g c t c t t t c t t t a a c c t a  
g t g c t g c t g c c t c t g c t a a c t g t t g g g g g c a a g c g a t g t c c c t g c c t t t c t a a a a g a c t g t g a a c c a c t c c a g g g g c a  
g a g a a a t c a c a t g c a g t g t c c c t t t c c a a a t c c t c c c a t g c c a t t t a t g t c c a a t g c t g t t g a c c t a t t g g g a g t t c a c g  
g t c t c g a t c c c t g a g g g a c a t t t t c t t t g t t g t c t t g g c t t c t a g a a g a g t a t c t t t a c t t g c c c c t c c c a a c a c a c  
a t t t c a t g g t c t c c t a a c a g c t a g a a g a a g a g g t a a g a c a a g c g t g a t t g t g g a a c c a t a g c c t c g t g c c t g c c t g  
t g a c a t g g t g a c c t g t g t a t c a g c c t g t g t g g g c t g a g a c c a a g t g g c t a c c a c a g a g c t c a g c c t a t g c t t c a t a a t g t  
a a t c a t t a c c a g a t c c c t a a t c c t c t c t t g g c t t a a c t g c a g a c a g a g a t g t c c a c a g c t c a t c a a a g g c t c t g c t t  
c t g g g t t c t t t g t g c t t a g a g t g g c t t c c t a a a t a t t t a a t a g g t c c c t t t c t g c c a g t c t c t t c t g t g c c c a t c c c t  
g a t t g c c c t t g g t a a a g t a t g a t g c c c t t a g t g t a g c a c g c t t g c c t g c t g t t c c t a a t c a t c t t c t c c t a c c t c c t c  
t t t a c a c c t a g c t c c t g t t c a g t c a c c t a g a a a t g c t c a c a g t c g t g g a a t a t g t c a t g t t c t t c c a c a c c t c c a t g c  
c t t t g t a g g t a c t g t t t g c t c t c a c a g g a g a a c t t t c t c t a a c t t g c c t a t c t t c t c a a c t c c t c c t t t c t c c a a g  
a t c t a g t t c c g g a t c c c c t c c c c t g a g c a t c c c t c c t t g g t t c t c a g g t a g t c a g t c a c t c t g c c c t g a a c t t c c a t g  
g c a c g t g a a a g a a a a t c t t t t a t t t t a a a c a a t t a c a g a c t c a c a a g a a g t a a t a c a a a t t a c a t g a g g g g t t c c c t  
t a a c c t t t c a t c c a g t t t c c c c a a t g g t a g c a g c a t g t g t a a c t g t a g a a t a g t a t c a a a c c a t g a a a t t g a c a t a g g  
t a c a a t t c a c a a c c t t c t t c a g a t t t c a c t a g c t t a t g t g c g c t c a t t t g t g t g t g t g t g c g t a t t a g t t c t a t g  
c a a t t t t a t c a t g t g t g a a t t c a t g t a a t t a c t a g c t c a g t c a a g c t g c a g a a a t a t c t a t t g t c a c a a a g c t c c t t c a  
t g c t a c c c t t a a t g g c c a c a g c c a c c t c c c t t c t c c t c a g t t c c t g a c a c c t g t c a a c c a c t a a t g c g t t c c t c g t t  
t t a c a g t t t t a t t a t t t c t a g a a t g t t a c a t a a a t g g a a c c a t a c a g t a g g t a t c c t t t g a t a c t g g c t t t t t t t t t  
t t t c a c t c a g c a g t a t t c c c t t a g a t c t a t c c a a g t t g t g t g t g t c a a c a g t t c a t t c c t c t t c a c t g c t g a g t a g t g t t  
c c c t g g g a g g g t g t a t c a c a g t t c c a t g g c a t t t t t a g a t g t a t t t t t a a a c a g c t t t c a g c a t c c t c a t t t t a a t t  
g t t c a t c a a g t c c t t t t c c c a a t a g a c t c t g a a t g t c c t t t a t c a t c g t a t t c c c a t c a c c a a c a t c a g t a c c c a a t  
a g g c c t a a a t a a c a t t t a t a g c c t c c t g c c t g c c t g a g a a a c c a g g g t g g a c a t g g a g a g a a g g c a c t t c t g a a a g t t  
c a a g c g c a g t g c s c t g t g t c c t t a c a c t c c a c t c c t c a g t g c t t c t g t g g g t t c a t t t c t g t c t t c t c c t g t c a c a g  
T C T G C A T G G A G G A G G A A C C C A C C A C T T G A A G C T G G G C G T G T C C A T T C A G A A C C T G G T A A A A G T C T A C C G A G A T G G G A T G  
A A G G T G G C T G T C G A T G G C C T G G C A C T G A A T T T T A T G A G G G C C A G A T C A C C T C C T C C T G G G C C A C A A T G G A G C G G G G A A  
G A C G A C C A C C A T g t a a g a a g a g g g t g t g g t t c c c g c a g a a t c a g c c a c a g g a g g g t t c t g c a g t a g a g t t a g a a a t t a t  
a c c t t a g g a a a c c a t g c t g a t c c c t g g g c c a a g g g a a g g a g c a c a t g a g g a g t t g c c g a a t g t g a a c a t g t t a t c t a a t c  
a t g a g t g t c t t t c c a c g t g c t a g t t t g c t a g a t g t t a t t t c t c a g c c t a a a c a a g c t g g g g c c t c a g a t g a c c t t t c c  
c a t g t a g t t c a c a g a a t t c t g c a g t g g t c t t g g a a c c t g c a g c c a c g a a a g a t a g a t t a c a t a t g t t g g a g g g a g t t g g  
t a a t t c c c a g g a a c t c t g t c t c t a a g c a g a t g t g a g a a g c a c c t g t g a g a c g a a t c a a g c t g g g c a g c t g g c t t g a t t g  
c c t t c c c t g c g a c c t c a a g g a c c t t a c a g t g g g t a g t a t c a g g a g g g t c a g g g g c t g t a a a g c a c c a g c g t t a g c c t c a  
g t g g c t t c c a g c a g a t t c c t c a a c c a t t c t a a c c a t t c c a a g g g t a t a t c t t t g g g g g t g a c a t t c t t t t c c t g t t  
t c t t t t t a a t c t t t t t t t a a a c a t a g a a t t a a t a t a t t a t g a g c t t t t c a g a a g a t t t t a a a a g g c a g t c a g a a a t c c  
t a c t a c c t a a c a c a a a a a t t g t t t t a t c t t t g a a t a a t a t g t t c t t g t t t g t c a t t t t c c a t g c a t g c g a t g t t a g g c  
a t a c a a a a t a c a t t t t t t a a a g a a t a c t t t c a t t g c a a a t t g g a a a c t t c g t t t a a a a a t g t c a t a c t a a a a t t g g c a  
t t t c t a a c c c a t a g g c c c a c t t g t a g t t a t t t a c c g a a g c a a a a g g a c a g c t t t g c t t t g t g t g g g t c t g g t a g g g t t c a  
t t a g a a a g g a a t g g g g g c g g t g g g a g g g t t g g t g t t c t g t t c t c t g c a g a c t g a a t g g a g c a t c t a g a g t t a a g g g t a  
g g t c a a c c c t g a c t t c t g t a c t t c t a a a t t t t g t c c t c a g G T C A A T C C T G A C C G G T T G T T C C C C C G A C C T C G G G C A C  
C G C C T A C A T C C T G G G A A A G A C A T T C G C T C T G A G A T G A G C A C C A T C C G G C A G A A C C T G G G G G T C T G T C C C C A G C A T A A C G  
T G C T G T T T G A C A T g t g a g t a c c a g c a g c a c g t t a a g a a t a g g c c t t t t c t g g a t g t g t g t g t g t c a t g c c a t c a t g g g a g  
g a g t g g g a c t t a a g c a t t t t a c t t t g c t g t g t t t t g t t t t t c t t t t t t c t t t t t a t t t t t t g a g a t g g a g t c t c g  
c t c t g t a g c c a g g c t g g a c t g t a g t g g c g c a t c t c g c t c a c t g c a a c c t t g c c t c c c a g g t t c a a g c g a t t c t c c t g  
c c t c a g c c t c c c a g t a g c t g g g a c t c t a g g c a c a c a c c a c c a t g c c c a g c t a a t t t t t g t g t t t t a g t a g a g a c g g g g  
t t t c a c c a t g t t g g c c a g g a t g g t c t c a a t g t c t t g a c c t c g t g a t c c g c c a c c t c g g t c t c c c a a a g t g c t g g g a a c a  
c a g g c a t g a g c c a c t g t g t c t g g c c a c a t t t a c t t t c t t t g a a t a t g g c a g g c t c a c c t c c g t g a a c a c c t t g a g a c c t  
a g t t g t t c t t t g a t t t a g c a g a a g t g g g a g g t g a a t g g t g a g c t g t a g a g g t g a c a t c a g c c c a g c c a g t g g a t g g g g  
g c t t g g g a a c a t t g c t t c c a t t a t t g t c a t g t g g a g g g c c t t a g c c c a t c c t c t c c c c c g c c a c c c t c c t t a t t  
g a g g c c t g g a g c a g a c t t c c c a g a c c t g g t a g t g c t t c a g g g c c c t g g t a t g a t g g a c c t a t a t t t g t g c t t a a g a c a t  
t t g c t c c c a c t c a g g t t g t c c c a t c a g c c a t a a g g c c c c a g g g a g c c c g t g t g a t g g a g c a g a g a g a c c t g a g c t c t  
g c a a t c t t g g g c a a g g c t t c c c t t a t g t t t c t t c t t a t c t a a a g t g a a c a g c t g g g g c t c a t g t g c t c c c t c c t c a t c  
t a a a g t g a a c a c a t g g g g c t c a t g t g a g g g t c c t c c c c g c t t t c a g a g c c t g a g g t c c c c t g a g g c t c a g g a a g g c t g c  
t c c a g g t g a g t g c c g a g c t c a c t t c t t g g t g g a c g t g c t g t g g g g a c a g c c a t t a a a g a c c a c a t c t t g g g g c c c t g a a

[illegible]

Genomic contig containing ABC1 exons 23 to 28:

gtgaacacacattaaagcatgagaagcatgaactagacatgtagccaggtaaaggccttgctgagatgggtggcaaaggc  
ctcattgcagcattcattggcaggccacagttcttttggcagctctgcttccctgaccttccacctcaggaagcgaggct  
gttcacacggccacacatgccagacagggctcctctgaagccacggctgccagtgcatgtgtcccagggaaagcttttct  
ctttagttctcacacaacagagcttcttggaaagccctccccggcgaaaggtgctgggtgacctgaccttgcctgcctga  
cccgcttctcaccctccttcttggccatcagGAGGACAGTGTCTCTCAGAGCAGTTCTGATGCTGGCCTGGGCAGCGACCAT  
GAGAGTGACACGCTGACCATCGgttaaggactctgggggtttcttattcaggtgggtgcctgagcttccccagctgggcaga  
gtggaggscagaggagaggtgcagaggtggtggcgctgactcaaggtttgctgctgggctggggctgggtggctgctg  
gggggtggcagcagcttgggtggcggttggcctaagtctgctgggggtgcctggggctcggtttgggagctagcagggcag  
tgtcccagagagctgagatgattgggggttggggaatcccttaggggagtggaactgaataccagggatgaggagctga  
gggccaagcagaggaggtgggatttgagcttagtacataagaagagtgagagcccaggagatgaggaacagccttccaga  
tttttcttgggtagcgtgtgtaggaggccagtgctcaccagtagcatatgtggaacagaagcttggaccttgctatctct  
gcctagtcctaattggctggcttttccaggaaggttctgcttccatggactgttagattaaccctttatttaggtaaat  
gaggaacactactttataagcataggaaaggggtgaagaatcttttaagattcctttactcaagtttcttttgaagaatc  
ccagagcttaggcaatagacaccagactttgagcctcagttatccattcaccatccaccacccaccacccatccttc  
catcctcccacctcctccattcaccatccaccatccagctgtccaccatctctacactgagtacctataatgtgcctgg  
ctttgggtgatacaaaggtgaataagacatagtcctttcctttgcccccaacctcagaccagagatgaacatgtggaatg  
acctaacacactggaacaggtgtggtgtatgagcggcaggcctctgatgaggggtggggatggccagcctcactccg  
aagccccctctgagttgattgagccatctttgcatctggtcctgcagATGTCTCTGCTATCTCCAACCTCATCAGGAAGC  
ATGTGTCTGAAGCCCGGCTGGTGGAAAGACATAGGGCATGAGCTGACCTATGTGCTGCCATATGAAGCTGCTAAGGAGGGA  
GCCTTTGTGGAAGTCTTTTCATGAGATTGATGACCGGCTCTCAGACCTGGGCATTTCTAGTTATGGCATCTCAGAGACGAC  
CCTGGAAGAAgtaagtttaagtggctgactgtcggaatatatagcaaggccaaatgtcctaaggccagaccagtagcctgc  
attgggagcaggattatcatggagtttagtcattgagtttttaggtcatcgacatctgattaatgttggccccagtgagcc  
atthaagatggttagtgggagatagcaggaaagaagtggttttccctctgtaccacagtagctgagatttgtgtgttga  
aaccagtggtacctaacacatttacatcccaaccttaaaactcctatgcacttatttaccctttaatgagcctcttactt  
aagtacagtgkgaggaacagcggcatcaggatcacttgggaacttgttagaaattcagcaacttgggcccagctcagacc  
tactgaatcagaatcaggagcaattctctggtgtgactgtgtcacagccaggtatcaactggattctcatacataggaaa  
tgacaaacgtttatggatggatagtcacttgtgccaggtgctgagatttgttttttggttttttgatttttttaataca  
ctgtgacctcatttaattctcaaaaaaagatgaaaaaatgaacactcaggaatgctgacatgagattcagaatcaggggt  
ttgggggttcaaagtcacatcctctctttatccatgtaatgcctccccttagagatacaacatcacagacctgaaggctg  
aaggggataataaaagctgtctggccaagtggtctccaagcttgacagtgacagagaatcacctggggatattatataaaa  
taaacataactaaggtttggcttcagggcctgtgaatcagaatttctggaggtgagggccttgaagctctgtatttctattg  
atactttggacacagtggtctatagactagagtttggaatgattgcgctcattcagattctctctctgagtttgaattg  
ctgccatcataatttctagtgtcttatttctcctgctcattctgtcttggataaacttatcatagtagctagcctacaaa  
gatttagagccacagtcctgaaagaagccacttgactcattccctgtaggttcagaataaaattcttctgcgcagtgctct  
gtcatagcttttttttaatt  
tgcatatttgggtcactgcaacctccacctcccaggttcaagcgattctcctgcctcagcctcccagtagctgagatta  
caagcatgtgctaccacgcccagctaattttgtatttttttagtagagatgggttttattccatgttgggtcaggctgggtctcg  
agctccagacctcaggtgatctgcccgcctcgccctcccaaagtgctgggattataggcctgagccacagcgctcagcca  
taactttaatttgaaaatgattgtctagcttgatagctctcaccactgaggaaatgttctctggcaaaaacggcttctct  
cccaggttaactctgagaaagtgatttaagaaatgtggcttctacttctctctgtcttacggggctaacatgccactcagt  
aatataataatcgtggcagtggtgactactctcgtaagtgttgggtgcttataatgttctctctctctctctctctctc  
TTCCTCAAGGTGGCCGAAGAGAGTGGGGTGGATGCTGAGACCTCAGgttaactgccttgaggggagaatggcacacttaaga  
tagtgccctctgctggctttctcagtgccagagttattgttcccttcccttgaattgttctattgcatctctcattttag  
agtgtaggtttgttgcatggggaaggtttgtttgtgtaataaaaataaagtatgggattctttccttgtgccttca  
GATGGTACCTTGCCAGCAAGACGAAACAGGCGGGCCTTCGGGGACAAGCAGAGCTGTCTTCGCCCGTTCACTGAAGATGA  
TGCTGCTGATCCAAATGATTCTGACATAGACCCAGgtctgttagggcaagatcaaacagtgctcctactgtttgaatgtga  
aattctctctcatgctctcacctgttttcttttggatggcctttagccaaggtgatagatccctacagagtcctaaagagaa  
gtgaggaaatggtaaaagccactgttcttttgcagcatcgtgcatgtgatcaaacctgaaagagcctatccatatacctt  
ccttttaagacataaagatgggtgcctcaatcctctgaacctatgtatttattatcttttctgccccgtcctagttcttg  
tatacattaggtgtttaattgttgaacaaatattcattcgagtagatgagtgatttgaagagtcagaaaggggaattt  
gctgttagagtttaattgtaccctaagacttagatatttgaggctgggcatgggtggctcatgccagtaatcccagcgctt  
gagaggctgaggtgggttagatcacctgaggtcaggagtttgagaccagctctgaccaacaaggtgaaaccccgctctact  
aaatacaaaaaattagccgagtggtggcacatgcctgtcatcccagctacttgggaggtgaggcaggagaatcgctt  
gaaccaggaggcagaggttgagtcagccacgggttgcgccattgcactccagactgggcaacaagagtgaaactccat  
ctcaaaaaagaaaaaaaagaattagatatttggatgagtggtgtcttgtgtgtttaactgagatggagaggagagcta

agacatcaaacaatatattgttaagatgtaaaagcacatcagttaggtatcatcttttaggacaaggatttctagaaaat  
 ttttaggaacagaaaactttccagttctctcaccctgctcaaagagtgtatggctcttacattatatataactgcctga  
 cttcatacagtatcagttacttagatcatcttgaaatgtgtccacgttttaccaaaaatataataggggtgagaagctgagatg  
 ctaattggcattgtgtattctcaaatatgtcaagctacgtacatggcctgtttcatagagtagtctataaagaattgatg  
 acttgattcatccgaatggctggctgtaacacctggttacgcatgaacacctcttttcagttgtctcaagacacctttct  
 tttctgtacttatcagacaaggactgaaaggcagagactgctactgttagacattttgagtcagcttttcttggacat  
 agctttgtcatgaaagccctttacttctgagaaaacttctagcttcagacacatgccttcaagatagttgttgaagacacc  
 agaagaaggagcatggcaatgccgaaaacacctaagataataggtgaccttcagtggtggcttcttgcaagAACCCAGAGA  
 GACAGACTTGCTCAGTGGGATGGATGGCAAAGGGTCCTACCAGGTGAAAGGCTGGAAACTTACACAGCAACAGTTTGTGG  
 CCTTTTGTGGAAGAGACTGCTAATTGCCAGACGGAGTCGGAAGGATTTTTTGTCTCAGgtgagacgtgctgttttcgccc  
 agagactctggcttcatgggtgggctgcaggctctgtgaccagtggaaggcaggatagcatcctggctcaagatatggatgc  
 cggagccagatttatctgtatttcaatcccagttctattccttgccagttgtgtatccgctggcaagttacttctctatg  
 cctcaatctcctcatctgtaaaatggggataataatattacctgcaatacaggggtgttacgaaaaataaaaatgaatagg  
 tgcttagaatggggcctgacattagtaagtgttagttttgtgtgtgtatgttatttttattttggaggagaacataa  
 aaaggacaaagtgtagaaaaactgggtgggtgtattcagctgtcataacatgagagttgttatgcccagatgcacttgac  
 atgtgaatttattagaaacatgatttttctctgagttgatgtttaactcaaactgatagaaaagataggtcagaatatag  
 ttggccaacagagaagacttgtagactattgtctgcatgtcagtggttgcatgctaacttcttattgatgatgtggatattgtta  
 atttttctactctataaaaatcaagaaatatagagaaaaggctgcagagagtccttctacttattggctatatgacctgggcaagct  
 agagcgggagtttggagcatacagagctcaagttgaatcctgactttgctacttattggctatatgacctgggcaagct  
 gcttagtctctctgatcctcagttacctttgtttgttgatgatgaccattgataacacaaccataaataatgacaacata  
 gagatagttctcattatagtagttgttatacagaattattcactcaatgttaattttctgcattgaaatcccagaacatt  
 agaattgggggcattattttgaatctttaagggtataaaggaatacatttctcagcaataaatggaaggagttttgggttaa  
 cttataaagtataaccaagtcattttttttcagagaagatatggtagaaaagtcctaggaggttgaagaaggaattggata  
 tttattctttctgagactatcatgggagataatgactatgggtgtccatgattggagccgttgctgtagagttggtttta  
 ttatagtgtaggatttgaatgggcatgtgttctcagacctcagaataaaaagagaaaaactgaggccagtggggagcgtg  
 acttcacatgggtacacttgtgctagagacagaaccaggattcaggacttctggctcctgggtcctgggttcatggcccaa  
 tggtagtctttctcagtccttcaggaggaggaaggcaggaccagtggttctgagtcaccctgaatgtgagcactatttact  
 tcgtgaacttcttggcttagtgctctgccagggtggccataacctctggccttggtgttgccagagaaaagggttagtttt  
 caggctccattgcttcccagctgccagaatgccttggtgcagcacagtcataggccctgcattcctcattgccgtgctg  
 gttgggtcggggaggtgggctggactcgtagggatttgcccttggccttggtttctaacacttgccgtttcctgctgtccc  
 cctgccccctccactgcctgggttaaagATTGTCTTGCCAGCTGTGTTTGTCTGCATTGCCCTTGTGTTTCAGCCTGATCGT  
 GCCACCCTTTGGCAAGTACCCAGCCTGGAACCTTCAGCCCTGGATGTACAACGAACAGTACACATTTGTCAGgtatgttt  
 gtcttctacatcccaggagggggtaagattcgagcagaccaaagatgtttacgagggccaagggaatggacttcagaatt  
 acacggtggaat



Genomic contig containing ABC1 exons 30 and 31:

tcttggcagtcctctactcattttttcagcacatcgagcataagatccagactctttcccaggcctctctcatctggctcct  
ctcctcctcctttatcattactcttcttctgtagcttatcctactccagccatgctgtcttctattattcctaaaaarta  
gaaatgcattttcttcttagggcctttgtacctgcacttgccatcgcttttgcctcagaatgttctttttgccaagcttttg  
cccagcttggtctccatcattgttatgttttggctgaaatgtcttctcttagtaggttcattctccccagtcactgtctt  
tttattttgctttattttgggcatctaagggttatcttattagtgatattgttggtcgtctcctccatgggcatacacct  
ccatgaaggcaggtattttcaccttagggcctcgaatatactggacagcatctggcacgtagtagatgctcaacgaatgt  
ttgttggtgagcaaatgggtgggtgattggattgaactgagttcagtatgtaaatatttagggcctctttgcattctat  
tttacttatgtataaaatgatacataatgatgatataaaatgatgtcacagtgtagaaggctgttggtgggatcaagcaatc  
aaatgagatcatgcttgtcttttccaaatgggtgaggggaatagatgcatgtttgtggtgttacggaatgatcctgtgctc  
ctgaggcaacagaaaggccaggccatctctggtaatcctactcttgcgtgcttccctttgcagAGACACGCCCTGCCAGG  
CAGGGGAGGAAGAGTGGACCACTGCCCCAGTTCCCCAGACCATCATGGACCTCTTCCAGAATGGGAACCTGGACAATGCAG  
AACCTTTCACCTGCATGCCAGTGTAGCAGCGACAAAATCAAGAAGATGCTGCCTGTGTGTCCCCCAGGGGCGGGGGCT  
GCCTCCTCCACAAgtgagtcactttcaggggggtgattgggcagaaggggtgcaggatgggctggtagcttccgcttgaa  
gcaggaatgagtgagatatcatgttgggaggggtctgtttcagtcctttttgttttttctgaggcgagtc  
ttgctctgtcgccaggtggagtgctgtggcatgatcttgctcactgcaacctccacgttcaagcgattct  
cctgcctcagcctcctgagtagctgggattacaggcacgcaccaccatgtctggctaatttttgtgttttagtagagat  
aggggttctcgctgttggctaggctgggtctggaattcctgacctcaggtgatccaccgcctcggtctccaaagtgtg  
ggattacaggcgtgagccactacgcccagcctgtttcagtccttaactcgcttctgtcataagaaaaagcatgtgagt  
tttgaggggagaaggtttggaccacactgtgcccattgctgtcccacagcagtaaaagtacaggacagactgtggcaggc  
ctggcttccaatcttggctctgcaacaaatgagctggtagcctttgacaggcctgggctgttcttccactctgaatta  
gggaggtggaccagaaaaactcctgtggatcttgtcaactctggtattcttagagactctgtttgggaaggagtcctgag  
ccatttttttttcttgagaatttcaggaagaggagtgcttatgatagctctctgctgcttttatcagcaaccaaattgc  
aggatgaggacaagcaattctaaatgagtacaggaactaaaagaaggcttggttaccactcttgaaaataatagctagtc  
caggtgcggggtggctcacacctgtaatctcagtattttgggatgccgaggtggactgatcacctaagggtcaggagttcg  
aaaccagcttgccaatgtggcgaaacctgtctactaaaaattcaaaaattagccaggcatgggtggcacatgcctgt  
aatcccagttacttgggaggctgaagcaggagaattgcttgaacctgggaggtggaggtcgagggagccaaaattgcgc  
cactgtactccagcctgagcaacacagcaaaactccatatcaaaaaataaaaatgaataaaaataacagctaattctagtc  
cagtataactccagtgaaacagaagatttattagcatagtgatgatggtgcttctaaaaatctcttgactacaaagaa  
tctcatttcaatgtttattgttttagatgttcagaataaattcttgggaaagaccttggttggtgtaagtgaattaccag  
tgccgagggcaggggtgaaccaagtctcagtgctggttgactgagggcagtgctggtgacctgtagtcaggtttccggtca  
cactgtggacatgggtcactgttgccttgatttgttttctgtttcaattcttgtctataaagaccgtagcttggtttt  
catgtgatgacagAGAAAAACAAACACTGCAGATATCCTTCAGGACCTGACAGGAAGAAACATTTTCGGATTATCTGGTGA  
AGACGTATGTGCAGATCATAGCCAAAAGgtgactttttactaaacttggccctgccttattattactaattagaggaat  
taaagacctacaaataacagactgaaacagtggggggaaatgccagattatggcctgattctgtctattggaagtttagga  
tattatcccaaactagaaaagatgacgagagggactgtgaacattcagttgtcagcttcaaggctgaggcagcctgggtct  
agaatgaaaatagaaatggattcaacgtcaaattttgccac

Genomic contig containing ABC1 exon 32: \_

gcatgctggagtgatagtgaccatgagtttctaagaaagaagcataatcttccatattgcatccacaattgaaatatta  
 ttgttaattgaaaaagcttctagggccaggcacggtgggtcatgcctgtaatcccagcactttaggagccaaggcgggtgg  
 atcacttgaggtcaggagtttgagaccagcctggccaacatggggaaaccctgtctctactaaaaatacaaaataagctg  
 ggcgtggtggtgcgtgcctgtaatcccagctacttgggaggctgaggcaggagaactgcttgaatctgggaggcggaggt  
 tgcagtgagctgagttcatgccattgcattccagcctgggcaacaagagcgaaaccatctccaaaagaaaaaaaaaaga  
 aagaaaaagcttctagtttggttacatcttgggtctataaggtggtttgtaaattggtttaacccaaggcctgggttctcat  
 ataagtaatagggtatattatgatggagagaaggctggaagaggcctgaacacaggcttcttttctctagcacaaccctac  
 aaggccagctgattctagggttatttctgtccgttccttatatcctcagggtggatatttactccttttgcattcattagga  
 ataggctcagtgcttttcttgaactgatttttgtttcttctgtctctgcagCTTAAAGAACAAGATCTGGGTGAATGAGT  
 TTAGgtaagttagctgtcttcttggcacgtttagctcagggggaggatggtgtgtaggtgtgcttggattgaagaaagcc  
 ttggggattggttctcactcacacacttgtgggtgccatctcactgtgagga

Genomic contig containing ABC1 exons 33 to 36:

gctttatagagtttctgcctagagcatcatggctcagtgcccagcagccctccagaggcctctgaatatttgatatact  
gatttccttgaggagaatcagaaatctcctgcaggtgtctagggatttcaagtaagtagtggtgtgaggggaatacctac  
ttgtactttccccccaaaccagattccccgaggtctcttaaggactcaaggacaatttctaggcatttagcacgggactaa  
aaaggtcttagaggaaataagaagcgccaaaaccatctctttgcaactgtatttcaaccatttgcctctctgggttttga  
aggaacaggtgggactggggacagaagagtcttgaagccagtttgtccatcatggaaaatgagataggtgatgtggcta  
cgtcagggggccgaaggtccttgttactgatttccgtcttttctctgccttttccccaaagggccaggacccttggga  
tctctgggcagagcagcagggccctataatagccctcatgctagaaaggagccggagcctgtgtataaggccagcgc  
agcctactctggacagtgagggttcccactctcccaactccccatctgcttgcctccagaccacattcacacacgagc  
cactgggttggaggagcatctgtgagatgaaacaccattctttcctcaatgtctcagctatctaactgtgtgtgtaatca  
ggccaggtcctccttgcctgggcagaaacatgggagtttaagagattgccaacatttattagaggaagctgacgtgtaact  
tctgaggcaaaatttagccctcctttgaacaggaatttgactcagtgaaacctgtacacactcgcactgagctgtgctgct  
gatgatactgtgcacccactgtctgggttttaagtgcaggctgttcttttagGTATGGCGGCTTTTCCCTGGGTGTCAG  
**TAATACTCAAGCACTTCTCCGAGTCAAGAAGTTAATGATGCCATCAAACAAATGAAGAAACACCTAAAGCTGGCCAAGG**  
taaaatatctatcgtaagatgtatcagaaaaatgggcatgtagctgtgggatataaggagtagttggcaggttaaaccgga  
tcacctggcagctcattgttctgaatatgttggcatacagagccgtctttggcatttagcgatttgagccagacaaaact  
gaattacttagttgtacgtttaaaagtgtaggtcaaaaacaaatccagaggccaggagctgtgggtcatgcctgtaatcc  
tagcactttgggaggtgaagcgggtggatcacttgaggtcaggagttcgagaccagcctggcctacatgacaaaacccc  
gtatctactaaaaatacaaaaaaattagctgggttgggtggcacacacctgtaatcccagctacttgggaggtgaggca  
ggagaattgcttgaacctgtaggaagaggttgtagtgcagcaagatcgacccgttgcactccagcctgggcaacaagag  
caaaactccatctcaaaaaacaaattaaatccagagattttaaagctctcagagggtgggcggtgggttacacctgtt  
atcccagcattttgggatgccgagggcgggcaagcacaaggtcaggagtttgagaccagcctggccaacatagtgaacc  
ctgtctctgctaaaaacatagaaaaattagccgggcatgggtggcgtgcgcctgtaatcccagctactcgggaggtgagg  
tgagagaatttcttgaacccgggagggcggaggttgcagtgagcccagattgcaccactgcactccagcctgggcgacaga  
gcaagactccatctcaaaaaaagctctcagaacaaccaggtttacaaatttgggtcagttggtaataaactgggtttcaa  
acatactttgctgaaayaatcactgactaaataggaatgaatcttttttttttttttaagctggcaagctggtctg  
taggacctgataagtactcacttcatttctctgtgtctcaggtttcccattttttaggtgagaattaaggggctctgataa  
aacagaccctaggattgtggacagcagtgatagtcctagagttccacaagctgtcttttgagtgtgagggccatgtatctg  
gcacatctgcaggcagagcgtgggtctgggtccttcagatgatgcccgtggagcactttgaggagtcctcaccacccgtg  
ataaccagacattaaaaatctggggctttgcacccaggatttctctgtgattccttctagacttgtggcatcatggcag  
catcactgctgtagatttctagtcacttgggttctcaggagccgtttatttaatggcttcacatttaatttcagtgaaaca  
ggtagtggcattgtctcttcacagggccgtcctgttgtccacaggttcagattgactgttggcccttatctatgtgaaca  
gtcacaactgaggcaggtttctgttgtttacagGACAGTTCTGCAGATCGATTCTCAACAGCTTGGGAAGATTTATGAC  
**AGGACTGGACACCAGAAATAATGTCAAG**gtaaaccgctgtctttgttctagtagctttttgatgaacaataatccttatg  
tttctggagtagctttcaactcatggtaaaagtggcaggggcatcacaacagaaaagagcaaaactattaactttaccag  
tgaggcagtagggtgtagtgtatgtatcagagaatttgctttgccaccagacataaccaggttaaccttgactaagttact  
taacctatctaaacctcagttycctcatctgtgaaatggagacagtaatcatagctatttccaaactgttgtgagaattc  
aatgagttaaagggtataagggtcctcaccacagcgcctgccacatagtcagtgatcactatgtcctgaacacatgtaata  
cttcgccatattctctgatcatagtgttttgccttgggtatgtgactagaatttcttctgaggtttatgggcatggttgg  
tgggtatgcacctgcctgcaggagcccggtttgggggcatcacttgtaacctgggtatgttttcttcagGTGTGGTTCAA  
**TAACAAGGGCTGGCATGCAATCAGCTCTTTCTGAATGTCATCAACAATGCCATTCTCCGGGCCAACCTGCAAAAGGGAG**  
**AGAACCCTAGCCATTATGGAATTACTGCTTTCAATCATCCCCTGAATCTCACCAAGCAGCAGCTCTCAGAGGTGGCTCTG**  
taagtgtggctgtgtctgtatagatggagtggggcaaggagaggggttatggagaaggggagaaaaatgtgaatctcatt  
gtaggggaacagctgcagagaccgttatattatgataaatctggattgatccaggctctgggcagaaagtataagtttac  
gaattggctgggttgggtcttctgaactgcagaagagaaaaatgacactgatatgtaaaaaatcgtaacatttagtgaattca  
tataaagttagttcaaaaattgttaattaaattataattataaagtgtttaatcagtttgatttgtttaaaaacca  
ctgttttaaatgttgggaatatgtttttatagcttgtatctttaaattcctaaattaagctgtgtgtgtgtgtgtgtgt  
gt  
atacagatctgggtttgaatctgggtctctaaactttatagatgtatgatattaaatgaggcagttcatgtaaattgcca  
ggccagcactcagcacagagattgatatttcacacacattagatacctttcctgtatgtggagcatggcagttcctgtttc  
tgctttactcctacaggataactaatataggacactaggatctttataccaagaccccatgtaatgggcttatgagaccat  
tcttcttataaaaaatctgcagagaatttttgtatgtgttagatcaataggctgcatactgttattttcaagttgatttaca  
ggcagaaatattaatttttagtaggttacagagtaataatttctgtctctcatttagttttcaagccccactagtccttt  
gtgtgtgaaaaatttacaacttactgtcttacaagggtcatgaacagtggaacaaagtgaatgccattaaccactctgact  
tccttcattagtttttattgtgacagtggaactcttttgacctcagtaataaccagtttggcatttacattgtcatattttta  
gacttaaaaatgatcatcttaaccctgaataaaatgtgtctgggtgaacagatgttttcttgggtgtgcctcagatatac



[illegible]

Genomic contig containing ABC1 exons 37 to 41:

aaattactctgactgggaatccatcgttcagtaagtttactgagtgtagacaccttggttgactggttgaaagacagaaa  
gggcatgtagtttataaaatcagccaaggggaaaatgcttgtcaaaatgtattgtcggtattttgattaatagtttatg  
tggcttcattaattcagagttactctccaatatgtttatctgccctttctgtctgataatgggtaaaactgtgtgatg  
cattgtatatttgatttaggggtgaactggatgtcttctgttttacttttagTGCAATTACGTTGTCCCTGCCACACTGG  
TCATTATCATCTTCATCTGCTTCCAGCAGAAGTCCCTATGTGTCTCCACCAATCTGCCTGTGCTAGCCCTTCTACTTTTG  
CTGTATGGGtaagtcacctctgagtgagggagctgcacagtgagataaggcatttggtgcccagtggtcagaaggaggcag  
ggactctcagtagacacttatcttttgtgtctcaacagGTGGTCAATCACACCTCTCATGTACCCAGCCTCCTTTGTGT  
TCAAGATCCCCAGCACAGCCTATGTGGTGCTCACCAGCGTGAACCTCTTCATTGGCATTAAATGGCAGCGTGGCCACCTTT  
GTGCTGGAGCTGTTTACCGACAATgtgagtcagtcagagagaacactcctgctgggatgagcatctctgggagccagagg  
acagtggttaattgtgatcttattccacttgtcagtggtattgacactgctgactgccttgtcctgtcttcagagtcctgt  
cttccctgagaaggcaagcacctttcttcttctgtgtgccttacattttgtctggtcaagcctttcagtttcttttgaca  
gttttttttacttctttctttttcaatgttgccttaccagagtagctcctctgccttccactttacacatgagagct  
gggagcagcattcagtcctaaggcttttaccatcacctctcttgggtgttttattgtcatctctaagatcaatgccttta  
gccttgatcataacctgaactctaactcctcaaatctcacttgcctagtggattgctccatttagatagatatagatac  
cccaacctggatatgtcctagttttcttcccttggaaacttaatgcttttcttggcatccctgtcacactcagtgccac  
taccatccactcggttggccaagctggctcttagagttatcctagatgcttgccttgcctgttgcagatttcccacattca  
actggttatgttgcagttcttccaggtatggacctctaaaataaggcttccctctccattccggttgtcattgccttgt  
ccaaacacagcacacaaggcctttacagttgcacaactcttccctgtccataccaccacaccccttcccagctgtaagc  
ttcagatgagttgcctccaaccacatgctcctgtaggcctggcttgaaatgccttcttctgtcacagggtctggtagt  
atatcccttggccttcaagatttagctaaaatgtgaagcttccctacctgctgggaggtgttctctcttctctgtgc  
tctcagagtccttagtccatgcctccagtacaacgtacatccacttacatggtaatttctgtttacataactttctctac  
tcggagtgagtgctgtttcttaataattttgcctctcccatgccttagcacagtgcatccagcgtatagcccttattca  
gttggtagatatttggccactgttgccttgtgggatcataagttctgatgtatttgagaagaatttctaaaattctgaca  
aaatcctgaaactcaaatattgaccagacatgagcaatttgcctttcaaatgctaagggtattttaaaggatttgcctt  
aattaaatctagcctgtttctaaagctttattcattatttctccatactcagagcatttctccagatttctaaagaatag  
aattttattgtacatatcatcagctatgcctgctgcttatttaattggtagtctgaattaaaaggctcgggttgtccctag  
agaatcaaatttttcttccatcccatatttcagaacttgatacatttttaggataaaccatgaatgacaccgcttctt  
ctccctcaccctcccttccctcccttttttttttttttttttttagAAGCTGAATAATATCAATGATATCCTGAAGTC  
CGTGTCTTGATCTTCCACATTTTGCCTGGGACGAGGGCTCATCGACATGGTGAAAAACCAGGCAATGGCTGATGCC  
TGGAAGGTTTGgtgagtgagcagtggtgtaggagctttaaaggagatggcactctgcataggccttggtaccctga  
actttgttttgaaagaagcaggtgactaagcacaggatgttccccaccctcatgcccagtgacagggctcatgccaac  
acagctggttgtggcatgggttttgtgacacaaccatttgcctgtgtctctgtagcattgagaaaagtgaagggtcag  
tttgaaggtaaggaaaatagtgttatttgcctggatccactggctcatgccactgtctgggttgggttagaagcactggaa  
aagtcaaaccataactttgagaattaggtgatcaggggaatcagaaggaaagatgcaaactttggctcttttaggcgaatc  
atgtgcctgcagatgaggtcatttattatcttttacacagtcctataaaattataatgtattacatcttttctacctta  
gaatgggttaaaaatatttctccggtagccatattgattatttcatccattagataatatagtc aaatgggcatgttat  
ttactgttcatagaagaggggctttttgcaacttgggctacaaaggagatattgaaggaaatttaaggaatgggttacatgg  
aactagatttaattgaatctagtggttaattgattcactaggatattgctactgaaaggggaatctgcttaaaagtgt  
ttctgatattttatttactaaaacttagaatttattaaaaaactgactgtgaaaattacttgggtcgtttgcctttt  
aaaaggatttttggcatgtctcattaaaaaaagaaatactagatatcttcagtgaaagttacaaatcgaatacacattggc  
tctgaaattctgattgatactgggtcataaaaagttttcccaaatcagacttggaaagtgtactctctgttactctt  
ttttcttgcctggtgtagccatttgccttatttgggaagtgcgtgaattttaaaggaaatagggcccaatttgagg  
aaggggccatgggttttgcctccattctgaccggatctctgcattgtgtctactagGGGAGAATCGCTTTGTGTCAAC  
ATTATCTTGGGACTTGGTGGGACGAAACCTCTTCGCCATGGCCGTGGAAGGGGTGGTGTCTTCTCTCATTACTGTTCTGA  
TCCAGTACAGATTCTTCATCAGGCCAGgtgagcttttcttagaaccctggagcacctgggtgaggggtcacagaggag  
gagcacagggaacactcaccaatgggggttgcattgaactgaactcaaaatatgtgataaaactgattttctctgatgtg  
ggcatcccgagccccctccctgcccattcctggagactgtggcaagtaggttttataatactacgttagagactgaatct  
ttgtcctgaaaaatagtttgaaagggttcatttttcttgttttttcccccaagACCTGTAAATGCAAAGCTATCTCCTCTG  
AATGATGAAGATGAAGATGTGAGGCGGGAAAGACAGAGAATTCTTGATGGTGGAGGCCAGAATGACATCTTAGAAATCAA  
GGAGTTGACGAAGgtgagagagtacaggttacaatagctcatcttcagtttttttccagctttatgtgtgtgaaccagca  
gtttgctgacttgccttaataaaagggtcatgtgttcccaaaatgtacatctataccaagggtctgtcaattttattttaaa  
aacaccatggagacttcttaaaagaattcttactgagaattcttttgtgatattgaattccattctcgaataactttgggtt  
tatatgcttacatttatgtgttagttattaaaacataactaattgtatatctagtc aaactgagtagagagataatgggt  
gatt

Genomic contig containing exons 42 through 45:

ttttaaaatacctgcaatacatatatatgttgaatagatgaaaaattatgtagatgataatgaatgatacgggttctaaaa  
agacaggttaaaaaagtaagttcactttttatgttgagcttcagaatcattcagaagccagtcgccacaaacgcagaccaag  
gctcttggcacatcaaataatgcctatggcttaggggttattgacaagtcctatgttgcagtgatgtgggttatagtcctg  
ccttccacagttgcttgggagagctgtgagtcactgaggccttatgaatgtttacattttgtttgttgcagATATATAGAA  
GGAAGCGGAAGCCTGCTGTTGACAGGATTTGCGTGGGCATTCTCTGGTGAGGtaaaagacactttgtctatatattgcgtt  
tgtccctattagttcagactatctctacccaatcaagcaacgatgctcgttaagaggtaaaaagtggatttttaaaggcttc  
tgtatttatgccagcatggagcaattagtcacgcagaagagagggaccctgtatgtcaagagaatgatttcagagaatcc  
aatacaatttaagaaaaagcatggggctggggcgagtgattcactcctgtaatcccagcactttgggaggccgaggtggg  
cggactcacgaggtcaggagattgagaccatcctggccaacatggtgaaaccccatctctactataaaatacaaaaattag  
ctgggcatagtagtgcatctcctgtagtcacagctactcgggaggctgaggcaggagaattgcttgaacctaggaggggga  
ggttgcccagattgcgctgctgcactccagcctggtgacagagtgagactcatgtcaacaacaaaaacagaaaaagcacg  
cacatctaaaacatgcttttgtgatccatttgggatggtgatgcattcaaatagttttttaaaaatagattttctcctt  
tctgggttccggttgtgttcttttatgcccctttgcccagagtaggtggtgcaatttggctagctggccttcattactgtt  
ttcacacattaactttggcctcaacttgacaactcaataatattataaatacagccacacttaaaatgggtcccat  
tgaaatacatatttaaatatctatacagatgtgttaaaaccaagaaaaatatttgattcttctctgatatttaagaattgaa  
ggtttgaggtagttacgtgttagggcatttatattcatgttttttagagtttgcttatacaacttaattcttcttctca  
gTGCTTTGGGCTCTTGGGAGTTAATGGGGCTGGAAAAATCATCAACTTTCAAGATGTTAACAGGAGATACCACTGTTACCA  
GAGGAGATGCTTTCTTAAACAAAAATAGgtgagaaaagaagtggcctgtattttgctgcaaagactttgtttttaattta  
ttaaagaaataggttgttttttattttgattacagtggtatttttagagttcataaaaaatgttgaaatatagtaaagggtaa  
agaagcacataaaaatcatccatgatttcaatatctagagataatcacaatttacatttcttctcagtcctcattctcttct  
tttaacagctttattcaggtataatttacatacaatataatttgcttgtttttaagagtataatttagtgatttttgggt  
aaattgagagttttgcaaccatcaccacaatccagttttagaactttccatcacccacatctgtcttatatacacata  
taaatgtgccatacaattgagatcatactgtatgtagaatttaaaattagtttttattgttaattgagtgattatgaata  
tttcccagtggttacatttcttaagatgtggaattttacattgctacataaaaatccccctatgtacatgtacctataat  
ttatttaataaattcttataaatgttggacacattagttccatttttctactatgtaaatatgtccctgtatacatctt  
ttattatttctcaggaacaattcctacaaagtaaatgcccctctctaaagagcatacaaattgactgagccaccgttag  
gccattttctgagactgcacaggtcacaaagcaatctgatcttgggaatacagctacattttataggtctcttagataa  
tgttactctaagtaactttaaatatgtggggcttctctggccttttttttttttgagacggagtttcaactcttactgcca  
ggctggagagcaatggcgcgaccttggctcactgcaacctccgctcccaggttcaagcgattctcctgcctcagcctcc  
tgagtagctgagattacaggtgcccgcacaaatgcctgcctaatttttttgtattttcagtagagatgggggttccaccat  
gttggccagactggtctcgagctcctgacctcaggtgatccactgcctcagcctcccaaagttctgggattacaggc  
gagccactgcgcccggcttctctggacttattatgtggagagatagtacaaggcagtggtttcagagtttttgacct  
gacctgttgggaaatacattttatatctcaacctagtagtacacacagacatgtagacacatgtataacctaaagttt  
cataaagcagtaacctactgttactaatgttagtgactctgtcttattctaccttatactgcgtcattaaaaaag  
tgctggtcatgacccactaaatttatttccaaaccactaatgaacaatgactcacaatttgaaacacactggacaggggg  
atagccaataaaaattgaaaagagcaaggaaattaatgtattcatgatctcctctcctgtctcttacatttttgagtagc  
aatgtaaaggaatcctaagagaacagacattctgggaatagcaggcctagcgtgcacaactgctttcctaggttgcctc  
ctagtagcagctcctgacgcataatagcagtggtgagtaataaccagcccataagtaaggttgtgcacagggactggttga  
agaactgatttgrttggtatagctgtgagggcctggcaggtgtccacgtgtgcctcaatcctaattctgaaaaaggctg  
accttgggggtgctaattagatacacagagaggaatgaatgctgccagaaggccaagttcatggcaatgccgctgtggct  
gaggtgcagtcacagtcgtgaacgtgaacactgaacttctctcacatgtgattcttcaactgactggcttcatagaacc  
ccaaagccacccaccaccacataaattgtgtctctaggttctgtgttgcctcacactcaaaatttctgggccttctcatt  
tggtgcatgtgaatggtgcatatgagtgaagtctaggatggggccttagcgttaaagccctggggtagtgtagtgagat  
tggttgtaaaagaatgtgcagtggttggcatgacctcagaaattctgaaatgggactgcacctgcagactgaagtgttcag  
agagccagggaggtgcaaggactggggagggtagagccaggaaccctgcctgccaggaagagctagcatcctgggggag  
aaaggctgtgctttcaagtagcagcagatgtattggtatctttgtaattggagaagcatactttacaggaacattaggcca  
gattgtctaaccagagtatctctacctgcttaaaatctaagtagttttcttgcctttgcagTATCTTATCAAACATCCA  
TGAAGTACATCAGAACATGGGCTACTGCCCTCAGTTTGATGCCATCACAGAGCTGTTGACTGGGAGAGAACACGTGGAGT  
TCTTTGCCCTTTTGAGAGGAGTCCCAGAGAAAGAAGTTGGCAAGgtactgtgggcacctgaaagccagcctgtctcctt  
ggcatcctgacaatatataccttatggctttccacacgcattgacttcaggctgtttttcctcatgaatgcagcagcac  
aaaatgctgggttctttgtatctgctttcaggggtgaaacctgtaacgggtggtggggcagggctgggtgggagagagga  
gtgctgctcccaccacacagagtccttctcctgctttggctcctcaccagttgtcaggttatgattatagaatctagtc  
ctactcagtgaaagaactttcatacatgtatgtgtaggacagcatgataaaattcccaagccagacaaagtcagggtgc  
tttttatcactgtagGTTGGTGAGTGGGCGATTGCGAACTGGGCCTCGTGAAGTATGGAGAAAAATATGCTGGTAACTA  
TAGTGGAGGCAACAAACGCAAGCTCTCTACAGCCATGGCTTTGATCGGCGGGCCTCTGTGGTGTTTCTGgtgagtataa

ctgtggatggaaaactgttgcctggcctgagtggaaaacatgactgttcaacccctatatgtccagggctgttgtat  
gattggcttgtcttccccagggacagcagagcaaccttggaaaagcagaggggaagcttctcccttggcacacactgggg  
tggctgtaccatgcctgcagatgctcccaaatagaggcactccaagcactttgtttcttagcgtgattgaggctggatat  
gtgatttgatctttctctggaacattctttctaatacatctttgtgttcattccctgaaaatgaagagtgtggacacagct  
ttaaataccccaaggtagcaactaggtcatagttccttacacacggatagatgaaaaacagatcagactgggaagtggcc  
cttgacctttttcttctgtagataagagcattgatgttattacgggaagaagcctttgaggctttatgtattccacct  
cggctctggaatttggttctgtaaggctaacagttgcaatatactagggtaatctgagtgaagctggaattaaaaaaaaa  
ggaatttcacccaatcttatactgacttcaatagagggttcagacaaaaagttgtttgtat

Genomic contig containing ABC1 exons 46 to 49:

ngccnngttnaaaangaaaatttnnnnnnaaattnaannttanngngnnntttccccagaaaaaacnaaaangatttccn  
ccnnggggggncnccnntcnaaaaggccccncttntttgngngaggggaaagnttttttgggaatttttaatttttgg  
tccccaaaacctatttgagaatttaattacataaaaaagttactcagaatatttgagtttctgcatcaataagacat  
ttataataatgacctgtgtttacaaatgaatttgaaagttactctaattctttgattcatcaagaaataactagaatggca  
agttaaaatttaagctgtttcaaagatgcttctgcatttaaaaaacaaatttatctttgattttttttccccccagcaaat  
aagacttattttatttctaattacagGATGAACCCACCACAGGCATGGATCCCAAAGCCCGCGGTTCTTGTGGAATTGTG  
CCCTAAGTGTGTCAAGGAGGGGAGATCAGTAGTGCTTACATCTCATAGgtccgtagtaaagtcttgggttctctcactgt  
gggatgttttaactttccaagtagaatatgcatcattttgtaaaaattagaaaaacagaaaagcaaaagagtaaaacaa  
ttattacctgaaattatataatgcatattcttcaaaaaatgcaagcccagtagataaatactgcttttttcaacttaatat  
tgtaaacattattccaagtcagtgcattttaggtgtcatttcttatagctggatagattccattaggaataactcttatt  
taactattccccctttttagacatttggattatttccaacttgttcacaattgtaaacaccactacactgaacgcatc  
atccctatatccacatgtacttgaacagaatacaattccctaggaagctggaatgctggaagtcatgggtgatgttctca  
tgggttacagagaatctctctaaaaactaaaacctctttctgttttaccgcagTATGGAAGAATGTGAAGCTCTTTGCACTA  
GGATGGCAATCATGGTCAATGGAAGGTTTCAGGTGCCTTGGCAGTGTCCAGCATCTAAAAATAGgtaataaagataaattt  
ctttgggatagtgcttagtgagaaggcttgatatttattcttttgtgagtataaaatgggtgcctctaaaaataaagggaa  
ataaaactgagcaaaacagtagtggaagaatgagggcttgaagtcggaactgcattcaaatctgtctttaccatt  
tactgggtctgtgactcttgggcaagttacttaactactgtaagagttagtttccctggaagatctacctctagcttgg  
tgctatagatgaaatgaaaaaaatttacatgtgccagtagctgtgagagcgcaagctttggagtcacaacacaaatgggtt  
tgcacctggccctaccaattatgagctctgagccatgggcaagtgaactaactccctgggctcagtttctctgtaacat  
ctgtcagacttcatgggtccaggtgaggattaaaggagatcatgtatttacagcacatggcatgggtgcttcacataaaat  
aagtattagtaaatgataactgggttcttctcagaaaacttatttctgggctgccaggggcccctttttcatggc  
acaagttgggttcccaggggtcagtagtttctttaaatagttttctggagatcttccatttgggtatttttctctgcttc  
agGTTTGGAGATGGTTATACAATAGTTGTACGAATAGCAGGTCCAACCCGGACCTGAAGCCTGTCCAGGATTTCTTTGG  
ACTTGCATTTCTTGGAGGTGTTTCYAAAAGAGAAACACCGGAACATGCTACAATACCAGCTTCCATCTTTCATTATCTTCTC  
TGGCCAGGATATTTCAGCATCTCTCCAGAGCAAAAAGCGACTCCACATAGAAGACTACTCTGTTTCTCAGACAACACTT  
GACCAAgtaagctttagtggtgtaattggtgctgaattcctgatctactattcctagctatgctttttactaaacctctctg  
caagagcagttttagtcttgaattggtgcttgaattcctgatctactattcctagctatgctttttactaaacctctctg  
aacctgaaaaggagatgatgctatgtactctataggattattgtgagaatttactgtaataataaccataaaaaactac  
catttagtgagcacctaccatggggccaggttttacttgggtgcctaatacctatttaaattagataaaaaagtagcaaat  
aggctctgacacttaagaagtactcagtaaatatttttcttccctcttccctttaatcaagaccgtatgtgccaagtagtaa  
tggatgactgagcagttgggtgatgtaggggtggggggcgatataagaaagttagtttttggccgggctggtggtcatgc  
ctgtaatcccagcacttggggaggctgaggagcaggcagatcatgaggtcaggagatccagataaatcctggccaacaggg  
tgaaaccccgctctactaaaaatacaaaaaattagctgggcatgggtgggtgcgcacttgtagtcccagctacttgcgaggc  
tgaggcaggagaattgctcgaacccaggaggtggaggttacagtgagccaaggtctcgccactgcactccagcctgggga  
cagagcaagacccatttcaaggggggaaaaaaagtctatttttaagttgttattgcttttttcaagtagttcttccctcc  
ttcacacacagttttctagttaatccatttatgtaattctgtatgctctacttgacctaatttcaacatctggaaaaat  
agaactagaataaagaatgagcaagttgagtggtatttataaagggtccatcttaattcttttaacagGTATTTGTGAAGTT  
TGCCAAGGACCAAGTGATGATGACCACTTAAAAGACCTCTCATACAAAAACCAGACAGTAGTGACGTTGCAGTTT  
TCACATCTTTTCTACAGGATGAGAAAGTGAAAGAAAGCTATGTATGAAGAATCCTGTTTATACGGGGTGGCTGAAAGTAA  
AGAGGAAGTAGACTTTCTTTGCACCATGTGAAGTGTGTGGAGAAAAGAGCCAGAAGTTGATGTGGGAAGAAGTAACT  
GGATACTGTACTGATACTATTCAATGCAATGCAATTCAATGcaatgaaaacaaaattccattacagggggcagtgcccttg  
tagcctatgtctttagtggtctcaagtgaagacttgaatttagttttttacctatacctatgtgaaactctattatgg  
aaccatggacatatgggttgaactcacactttttttttttttttttttttgttctctgtgtattctcattgggggtgcaaaa  
taattcatcaagtaatcatggccagcattattgatcaaaatcaaaaggtaatgcacatcctcattcactaagccatgcc  
atggccaggagactgggttcccggtgacacatccattgctggcaatgagtggtgccagagttattagtgccaagtttttca  
gaaagtttgaagcaccatgggtgctcatgctcacttttgtgaaagctgctctgctcagagttctcaacattgaatatca  
gttgacagaatgggtgccatgctgggtaacatcctgctttgattccctctgataagctgttctgggtggcagtaacatgca  
acaaaaatgtgggtgctccaggcaggggaaacttgggtccattgttatattgtcctatgcttcgagccatgggtctaca  
gggtcatccttatgagactcttaatatacttagatcctggtgaagaggcaagaatcaacagccaaactgctggggctgc  
aactgctgaagccaggcatgggattaaagagattgtgcgttcaaacctagggaagcctgtgcccatttgtcctgactgt  
ctgctaacatgggtacactgcactctcaagatgtttatctgacacaagtgtattatttctggctttttgaatttaactatagaa  
aatgaaaagatggagttgtattttgacaaaaatgtttgtactttttaatgttatttggaaattttaaagttctatcagtgac  
ttctgaatccttagaatggcctctttagaaccctgtggtatagaggagtagggccactgcccactatttttattttct  
tatgtaagtttgcataatcagtcagtagtgcttagaaaagcaatgtgatgggtcaggatctcatgacattatatttgagt  
ttctttcagatcatttaggatactcttaattctcacttcatcaatcaaatattttttgagtgtagtgcgtgtagctgaaagag

tatgtacgtacgtataagactagagagatattaagtctcagtacacttcctgtgtgtgtattcagctcactgggttac  
aaatataggttgtcttgtggttgtaggagcccactgtaacaatactgggcagccttttttttttttttaattgcaac  
aatgcaaaagccaagaaagttaagggtcacaagtctaacaatgaattcttcaacagggaaaacagctagcttgaaaac  
ttgctgaaaaacacaacttgtgtttatggcatttagtaccttcaataattggctttgcagatattggataccccattaa  
atctgacagctctcaaatttttcatctcttcaatcactagtcaagaaaaataaaaaacaacaatacttccatatggag  
catttttcagagttttctaaccagctcttatttttctagtcagtaaacatttgtaaaaatactgtttcactaatacttac  
tgtaactgtcttgagagaaaagaaaaatatgagagaactattgtttggggaagttcaagtgatctttcaatatcattac  
taacttcttccacttttccagaatttgaatattaacgctaaagggtgtaagacttcagatttcaaattaatctttctata  
tttttaaatattacagaatattatataaaccactgctgaaaaagaaacaaatgattgttttagaagttaaaggccaatat  
tgattttaaaatattaag

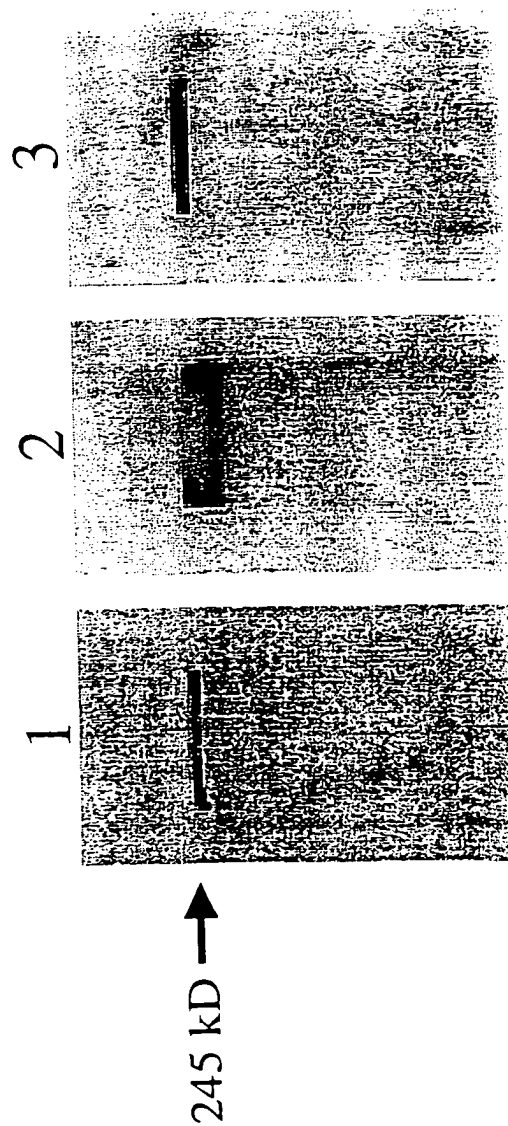


Fig. 13

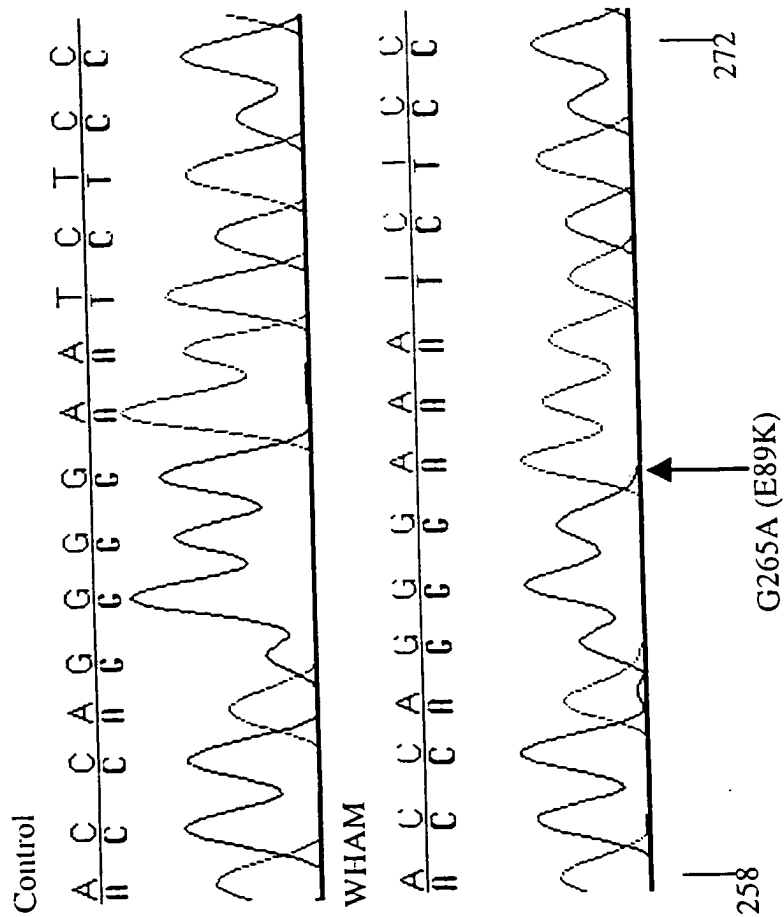


Fig. 14



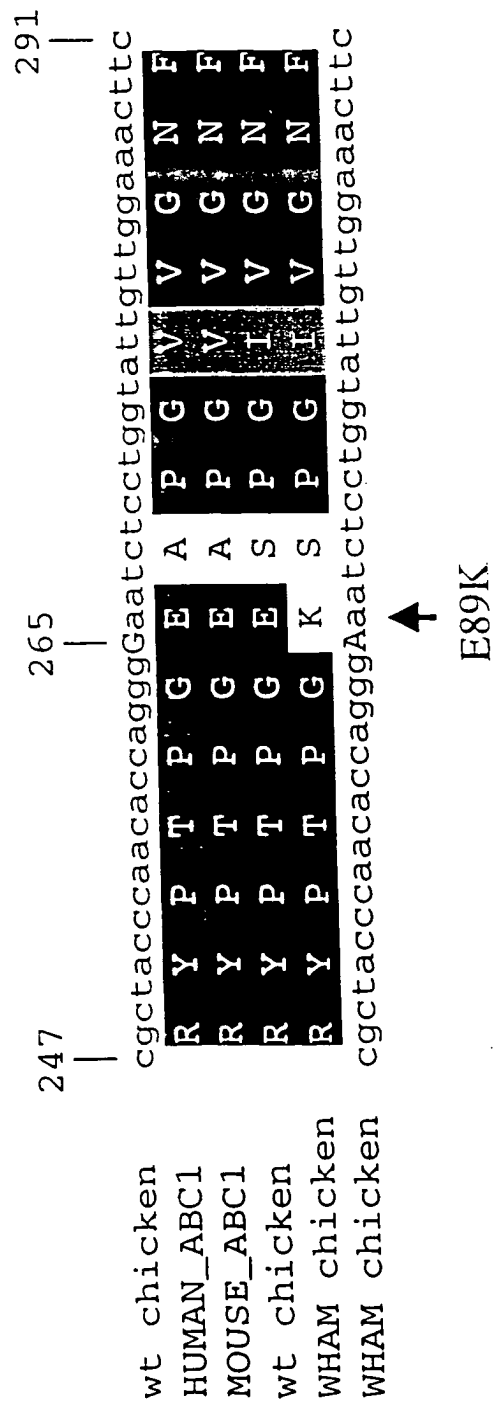


Fig. 15

No.	Name	Location in SEQ ID No. 14	Sequence	Sequence Strand Length
1	PPRE	58-69	AGGTAAAAGTCA	12 Complement
2	PPRE	1997-2009	AGAGTAGAGGGCA	13 Lead
3	PPRE	2150-2161	ATGTCAAAGTTCA	12 Lead
4	PPRE	2156-2169	AGTTCAAAAGGGCA	14 Lead
5	PPRE	4126-4139	AGGCCAGCAGGGCC	14 Complement
6	PPRE	5075-5087	AGGGCAGAAAGTGA	13 Lead
7	PPRE	6604-6615	ATGCCAAAGGTCA	12 Complement
8	PPRE	6731-6743	GGGGCAAGGGTA	13 Complement
9	PPRE	7220-7233	AGGTAATGAGGACA	14 Complement
10	PPRE	7554-7568	GGATCACGAGGTCA	15 Complement
1	SRE	159-166	CAGCCCAT	8 Lead
2	SRE	1133-1140	CAGCTCAC	8 Complement
3	SRE	1145-1152	CACACCAC	8 Lead
4	SRE	1809-1816	CAGCCCTC	8 Complement
5	SRE	1894-1901	CAGCCCAT	8 Lead
6	SRE	2563-2570	CAACCAC	8 Lead
7	SRE	3303-3310	CAGCTCAC	8 Lead
8	SRE	3470-3477	CCGCCAC	8 Lead
9	SRE	4784-4791	CTCCCCAC	8 Complement
10	SRE	4802-4809	CAGCCTAC	8 Complement
11	SRE	4970-4977	CACCTCAC	8 Complement
12	SRE	6487-6494	CAGCCTAC	8 Complement
13	SRE	6565-6572	CACCCAAC	8 Complement
14	SRE	6727-6734	CACCTAC	8 Lead
15	SRE	7041-7048	CACCCAAC	8 Lead
16	SRE	8059-8066	CAGCCCTC	8 Complement
1	ROR(retinoic acid receptor related)	166-172	AGGGTCA	7 Complement
2	ROR(retinoic acid receptor related)	166-173	AAGGGTCA	8 Complement
3	ROR(retinoic acid receptor related)	363-370	ATGGGTCA	8 Lead
4	ROR(retinoic acid receptor related)	364-370	TGGGTCA	7 Lead
5	ROR(retinoic acid receptor related)	2218-2225	TAGGGTCA	8 Lead
6	ROR(retinoic acid receptor related)	2219-2225	AGGGTCA	7 Lead
7	ROR(retinoic acid receptor related)	3643-3649	TGGGTCA	7 Lead
8	ROR(retinoic acid receptor related)	6604-6610	AAGGTCA	7 Complement
1	SREBP-1 or "E box"	473-479	ACACCTG	7 Complement
2	SREBP-1 or "E box"	536-541	ACACATG	7 Lead
3	SREBP-1 or "E box"	537-543	TCATGTG	7 Complement
4	SREBP-1 or "E box"	555-561	TCATGTG	7 Complement
5	SREBP-1 or "E box"	925-931	ACACTTG	7 Lead
6	SREBP-1 or "E box"	967-973	TCACTTG	7 Lead
7	SREBP-1 or "E box"	968-974	TCAAGTG	7 Complement
8	SREBP-1 or "E box"	1063-1069	ACAGGTG	7 Complement
9	SREBP-1 or "E box"	1104-1110	TCACTTG	7 Lead
10	SREBP-1 or "E box"	1105-1111	TCAAGTG	7 Complement
11	SREBP-1 or "E box"	1561-1567	TCACTTG	7 Lead
12	SREBP-1 or "E box"	1670-1676	TCAAATG	7 Lead
13	SREBP-1 or "E box"	1748-1754	ACACTTG	7 Lead
14	SREBP-1 or "E box"	1749-1755	ACAAGTG	7 Complement
15	SREBP-1 or "E box"	1852-1858	TCATGTG	7 Lead
16	SREBP-1 or "E box"	1853-1859	ACACATG	7 Complement
17	SREBP-1 or "E box"	1899-1905	ACAAATG	7 Complement
18	SREBP-1 or "E box"	2199-2205	ACACGTG	7 Lead
19	SREBP-1 or "E box"	2393-2399	ACAGCTG	7 Complement
20	SREBP-1 or "E box"	2559-27005	ACACCTG	7 Lead
21	SREBP-1 or "E box"	2677-2683	TCACATG	7 Complement
22	SREBP-1 or "E box"	2740-2746	ACAACTG	7 Complement
23	SREBP-1 or "E box"	2969-2975	ACAAATG	7 Lead
24	SREBP-1 or "E box"	2979-2985	ACACATG	7 Lead
25	SREBP-1 or "E box"	2981-2987	ACATGTG	7 Lead
26	SREBP-1 or "E box"	2980-2986	ACATGTG	7 Complement
27	SREBP-1 or "E box"	2982-2988	ACACATG	7 Complement
28	SREBP-1 or "E box"	3461-3467	TCAGGTG	7 Lead
29	SREBP-1 or "E box"	3462-3468	TCACCTG	7 Complement
30	SREBP-1 or "E box"	3547-3553	TCAACTG	7 Complement
31	SREBP-1 or "E box"	3752-3758	ACACATG	7 Lead
32	SREBP-1 or "E box"	4226-4232	TCACCTG	7 Lead
33	SREBP-1 or "E box"	4582-4588	ACACGTG	7 Complement
34	SREBP-1 or "E box"	4588-4594	TCAGTTG	7 Lead
35	SREBP-1 or "E box"	4861-4867	TCAGGTG	7 Lead
36	SREBP-1 or "E box"	4951-4957	ACAAATG	7 Lead
37	SREBP-1 or "E box"	5096-5102	TCAAATG	7 Complement
38	SREBP-1 or "E box"	5912-5918	ACAGTTG	7 Lead
39	SREBP-1 or "E box"	5913-5919	TCAACTG	7 Complement
40	SREBP-1 or "E box"	6245-6251	ACACATG	7 Complement
41	SREBP-1 or "E box"	6288-6294	ACAACTG	7 Complement
42	SREBP-1 or "E box"	6623-6629	TCATTTG	7 Lead
43	SREBP-1 or "E box"	6836-6842	TCACCTG	7 Lead
44	SREBP-1 or "E box"	6837-6843	ACAGGTG	7 Complement
45	SREBP-1 or "E box"	7032-7038	ACAGGTG	7 Complement

Fig. 16

46 SREBP-1 or "E box"  
 47 SREBP-1 or "E box"  
 48 SREBP-1 or "E box"  
 49 SREBP-1 or "E box"  
 50 SREBP-1 or "E box"  
 51 SREBP-1 or "E box"  
 52 SREBP-1 or "E box"  
 53 SREBP-1 or "E box"  
 54 SREBP-1 or "E box"  
 55 SREBP-1 or "E box"  
 56 SREBP-1 or "E box"  
 57 SREBP-1 or "E box"  
 58 SREBP-1 or "E box"  
 59 SREBP-1 or "E box"  
 60 SREBP-1 or "E box"

7069-7075  
 7101-7107  
 7138-7144  
 7139-7145  
 7240-7246  
 7467-7473  
 7640-7646  
 7641-7647  
 7653-7659  
 7654-7660  
 7735-7741  
 7838-7844  
 7880-7886  
 8051-8057  
 8052-8058

TCAGGTG  
 ACATATG  
 ACAGTTG  
 TCAACTG  
 ACACCTG  
 ACAGGTG  
 TCATTG  
 TCAAATG  
 TCAGTTG  
 ACAACTG  
 ACAAATG  
 TCAGGTG  
 TCATCTG  
 TCAGCTG  
 TCAGCTG

7 Lead  
 7 Complement  
 7 Lead  
 7 Complement  
 7 Complement  
 7 Lead  
 7 Lead  
 7 Complement  
 7 Lead  
 7 Complement  
 7 Lead  
 7 Complement  
 7 Complement  
 7 Complement  
 7 Lead  
 7 Complement

**Fig. 16**